

188035

JPRS-TTP-87-011

19 MAY 1987

## Worldwide Report

# TELECOMMUNICATIONS POLICY, RESEARCH, AND DEVELOPMENT

Reproduced From  
Best Available Copy

19981208 160

SPECIAL NOTICE INSIDE

DTIC QUALITY INSPECTED 3

**FBIS**

FOREIGN BROADCAST INFORMATION SERVICE

REPRODUCED BY  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL TECHNICAL  
INFORMATION SERVICE  
SPRINGFIELD, VA 22161

21  
76  
A05

### SPECIAL NOTICE

Effective 1 June 1987 JPRS reports will have a new cover design and color, and some reports will have a different title and format. Some of the color changes may be implemented earlier if existing supplies of stock are depleted.

The new cover colors will be as follows:

CHINA.....	aqua
EAST EUROPE.....	gold
SOVIET UNION.....	salmon
EAST ASIA.....	yellow
NEAR EAST & SOUTH ASIA...	blue
LATIN AMERICA.....	pink
WEST EUROPE.....	ivory
AFRICA (SUB-SAHARA).....	tan
SCIENCE & TECHNOLOGY.....	gray
WORLDWIDES.....	pewter

If any subscription changes are desired, U.S. Government subscribers should notify their distribution contact point. Nongovernment subscribers should contact the National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22161.

#### NOTE

JPRS publications contain information primarily from foreign newspapers, periodicals and books, but also from news agency transmissions and broadcasts. Materials from foreign-language sources are translated; those from English-language sources are transcribed or reprinted, with the original phrasing and other characteristics retained.

Headlines, editorial reports, and material enclosed in brackets [ ] are supplied by JPRS. Processing indicators such as [Text] or [Excerpt] in the first line of each item, or following the last line of a brief, indicate how the original information was processed. Where no processing indicator is given, the information was summarized or extracted.

Unfamiliar names rendered phonetically or transliterated are enclosed in parentheses. Words or names preceded by a question mark and enclosed in parentheses were not clear in the original but have been supplied as appropriate in context. Other unattributed parenthetical notes within the body of an item originate with the source. Times within items are as given by source.

The contents of this publication in no way represent the policies, views or attitudes of the U.S. Government.

#### PROCUREMENT OF PUBLICATIONS

JPRS publications may be ordered from the National Technical Information Service, Springfield, Virginia 22161. In ordering, it is recommended that the JPRS number, title, date and author, if applicable, of publication be cited.

Current JPRS publications are announced in Government Reports Announcements issued semi-monthly by the National Technical Information Service, and are listed in the Monthly Catalog of U.S. Government Publications issued by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Correspondence pertaining to matters other than procurement may be addressed to Joint Publications Research Service, 1000 North Glebe Road, Arlington, Virginia 22201.

19 MAY 1987

WORLDWIDE REPORT  
TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

CONTENTS

ASIA

HONG KONG

- Concern Over Mobile Telephone Licenses Noted  
(Carolyn Leung; Hong Kong SUNDAY MORNING POST, 22 Mar 87) 1

JAPAN

- Foreign Telecommunications Access Plan Proposed  
(Tokyo KYODO, 2 Apr 87) ..... 2

LAOS

- Briefs  
Automatic Telephone System 4  
Short Wave Radio 4

PEOPLE'S REPUBLIC OF CHINA

- Largest Computer Network in PRC Established  
(Hong Kong SOUTH CHINA MORNING POST, 24 Mar 87) ..... 5
- Foreign Companies Develop PRC Communications  
(Xie Meizuan; Hong Kong ZHONGGUO XINWEN SHE, 6 Apr 87) ... 6
- JIEFANGJUN BAO Assesses First Satellite Station  
(Beijing JIEFANGJUN BAO, 10 Mar 87) ..... 8
- Xiamen-Nanping Optical Cable Under Construction  
(Hong Kong ZHONGGUO XINWEN SHE, 15 Apr 87) ..... 9

Revising Proposal to the Recommended Measurement Method of Errors of PAL Chrominance Signal Demodulation Angle (Yu Sile, Li Guiliug; Tianjin TIANJIN DAXUE XUEBAO, No 1, Jan 87) .....	10
---	----

Briefs	
Central Color TV Project	11

## LATIN AMERICA

### ARGENTINA

Siemens Plans To Invest Heavily in Telecommunications Sector (Edgardo A. Silveti; Buenos Aires MERCADO, 19 Mar 87) ....	12
--	----

### BOLIVIA

Satellite Stations To Promote Integration (La Paz PRESENCIA, 5 Apr 87) .....	19
---	----

Briefs	
Telephone Project 85 Percent Soviet	20
Microwave System Expansion Planned	20
Manager Charged With Bribery	21
ENTEL Services Triple	21

### JAMAICA

Montego Bay Teleport Project Gains Approval of INTELSAT (Kingston THE DAILY GLEANER, 1, 4 Apr 87) .....	22
Government Commitment, by Florizel Glasspole	22
INTELSAT Action	22

### TRINIDAD AND TOBAGO

Survey Could Result in Closure of Two TV Channels (Port-of-Spain SUNDAY GUARDIAN, 12 Apr 87) .....	24
---	----

## NEAR EAST/SOUTH ASIA

### ALGERIA

Swedish Firm To Build Telephone Exchanges (Algiers EL MOUDJAHID, 24, 25 Mar 87) .....	25
Three Algerian-Swedish Contracts Signed	25
Joint Venture Partnership Formed	26

## INDIA

Monitors Refute Denial of Pro-Khalistan Broadcasts (New Delhi PATRIOT, 22 Mar 87) .....	27
Broadcasting Ministry Issues 1986-87 Annual Report (Bombay THE TIMES OF INDIA, 2 Apr 87) .....	28
Communications Minister Holds Madras Press Conference (Madras THE HINDU, 5 Apr 87) .....	29
Parliament Discusses Radio, Television Programming (New Delhi PATRIOT, 20 Mar 87) .....	30
Center Telecom Policy Contradicted in Karnataka (Madras THE HINDU, 23 Mar 87) .....	32
First Optical Fiber Link for Railroads Planned (Bombay THE TIMES OF INDIA, 27 Mar 87) .....	33
Telephone Plans Told, Rural Automatic Exchange Developed (New Delhi PATRIOT, 1 Apr 87) .....	34
Briefs	
Hi-Tech Telephone Manufacture	35
Indigenous Digital Exchange	35
International Phone Links	36
Calcutta Phone Plans	36

## PAKISTAN

Pakistan-UAE Cable Link Commissioned (Lahore THE PAKISTAN TIMES, 12 Apr 87) .....	37
Briefs	
Pakistan-Kuwait Media Agreement	38
Satellite Receiving Earth Stations	38

## USSR

VOA Propaganda Campaign, Psychological Warfare Hit (V. Matyash; Moscow SOVETSKAYA ROSSIYA, 22 Mar 87) .....	39
U.S. Radios Hit for Disinformation, Slander (V. Nikanorov; Moscow SOVETSKIY VOIN, No 4, Feb 87) .....	41
'Free-World Life' Depicted by 'Radio Voices' Hit (A. Kudinov; Tashkent PRAVDA VOSTOKA, 15 Dec 87) .....	44

U.S.-USSR Information Technology Exhibit Exchange (V. Shmyganovskiy; Moscow IZVESTIYA, 6 Apr 87) .....	46
---	----

Briefs	
Broadcast Agreement With Switzerland .....	47

## WEST EUROPE

### EUROPEAN AFFAIRS

EC Adopts Measures for Information Technology Standards (Bonn TECHNOLOGIE NACHRICHTEN-MANAGEMENT INFORMATIONEN, No 449, 11 Feb 87) .....	48
--	----

### FEDERAL REPUBLIC OF GERMANY

Results of Siemens, Esprit GaAs MMIC R&D for Satellites, Radar (E. Pettenpaul; Coburg MIKROWELLEN & MILITARY ELECTRONICS MAGAZIN, No 6, 1986) .....	52
Munich HDTV Conference Views Standards Controversy (Egon Schmidt; Duesseldorf VDI-NACHRICHTEN, No 4, 23 Jan 87) .....	57

### ITALY

Public, Private Sectors Struggle for Control of Telit (Rome LA REPUBBLICA, 20 Feb 87) .....	58
Socialists Recognize Strategic Impact, by Alessandra Carini, Giuseppe Turani .....	58
Antiquated Legislation .....	66

### PORTUGAL

Contract Award Seen Upgrading Sintra Space Telecommunication Center (Lisbon O JORNAL, 3 Apr 87) .....	67
---	----

/9986

CONCERN OVER MOBILE TELEPHONE LICENSES NOTED

Hong Kong SUNDAY MORNING POST in English 22 Mar 87 p 3

[Article by Carolyn Leung]

[Text]

A ROW has erupted between the Government and Hongkong Telephone over the provision of mobile telephone services in the territory.

Hongkong Telephone subsidiary CSL is planning to launch its first series of hand-held telephones this month but its hopes of seizing a lion's share of the market were shattered when the Government invited tenders to bid for a fourth public mobile telephone licence.

"Privately, we are furious with the Government but we can't protest. It doesn't pay to be angry with them," said CSL director Mr A F M Conway. "There is only one licence in the US, two in the UK and a small place such as Hongkong will have four.

"Ironically, the fourth licence holder will be using the same telecommunications system, TACS, as we are using but on a different frequency," said Mr Conway. "We applied earlier to use that particular frequency as part of our expansion plan but the Government reckons it is more suitable to put out to public tender."

At present, the hand-held telephone market in Hongkong is dominated by CSL's arch rival, Hutchison Telephone. Chinatel has a licence to operate public mobile telephones.

Hutchison Telephone and Chinatel have bid for the fourth licence while powerful newcomers such as British Telecom, Elekon and Ericsson have also relayed their interests to the Government.

In fact, a total of 16 parties are fighting for the potentially lucrative licence.

"There is no way the Government should protect the existing licensees," said Dr Norman Wai, senior controller of telecommunications. "If there is a frequency available, the Government will open it to public tender.

"We haven't made up our mind how many licences we are going to give in Hongkong. In the end, it could be more than four."

The 16 parties which have declared an interest in bidding for the licence are working on market surveys and proposals at present. The Government is expected to announce the successful bidder this summer.

The fourth licence is required to provide public mobile telephone services under the TACS system and will not only ruin CSL's plan to sweep the hand-held telephone market, but also dash its hope to develop TACS as an unified telecommunications system for the Pearl River Delta.

In order to enhance its competitiveness, CSL has

reached an agreement with the Guangdong Provincial Posts and Telecommunications Administration to develop a standardised operation of mobile telephone and paging services using the TACS system.

That means CSL customers will be able to use the same telecommunications services in southern coastal cities such as Guangzhou, Zhuhai and Shenzhen as they do in Hongkong.

The fourth licence holder will also be using the TACS system so CSL, having already paid \$150 million for the TACS system, will see its edge disappear.

CSL has been losing out to Hutchison Telephone in the local hand-held mobile telephone market for the past two years because the company only concentrates on the car-mounted telephone market, netting a 52 per cent market share.

"We did a market survey in 1981 and it showed a strong need for car-mounted telephones. Nobody said anything about hand-held telephones at that time," said Mr Conway.

"The situation has changed so much over the last two years that we now have to decide whether there are more cars or more hands in Hongkong. And the answer is obvious."

/13104

CSO: 5550/0113



FOREIGN TELECOMMUNICATIONS ACCESS PLAN PROPOSED

OW021309 Tokyo KYODO in English 1256 GMT 2 Apr 87

[Text] Tokyo, April 2 KYODO -- Mediator Fumio Watanabe, trying to merge two firms planning to enter Japan's international telecommunications market, Thursday came up with a "final" mediation plan allowing two foreign firms -- one British and other American -- to become "core" members of the proposed unified firm.

Watanabe, chairman of the Telecommunications Committee of the Federation of Economic Organizations (Keidanren), asked eight "core" firms he specified to draw up details of the merger, saying that his mediating work is over.

The mediation plan came as government officials disclosed that Prime Minister Yasuhiro Nakasone had received a letter from President Ronald Reagan on the problem of the "second KDD."

Japan's telecommunications market is presently monopolized by Kokusai Denshin Denwa Co. (KDD).

The content of the letter was not immediately revealed, but it was believed that Reagan asked Japan not to restrict foreign participation in the "second KDD." Watanabe has been trying to unify the two recently formed firms in keeping with the position of the Posts and Telecommunications Ministry that Japan's international telecom market is not large enough to admit two new firms in rivalry with KDD.

One of the two firms is International Digital Communications Planning Inc. (IDC), partly owned by Cable and Wireless PLC. (C and W) of Britain, and Pacific Telesis International Inc. (PTI) and Merrill Lynch and Co., both of the United States. The other is International Telecom Japan Inc. (ITJ), formed by Japanese firms alone.

Watanabe's mediation plan called for the eight "core" firms to have an equal equity share each in the proposed unified firm and to send directors into it.

The eight firms he mentioned are Toyota Motor Corp., C. Itoh and Co., C and W, and PTI of IDC and Mitsubishi Corp., Mitsui and Co., Sumitomo Corp. and Matsushita Electric Industrial Co. of ITJ.

The plan also called for the problem of laying a submarine fiber optics communication cable across the Pacific Ocean to be studied immediately after the formation of the "second KDD." However, it did not specify the equity share of the eight firms. Watanabe had earlier suggested 5 percent as a compromise figure. Moreover, the plan in effect shelved the problem of transpacific submarine cable, which is regarded by C and W as vital to its strategy of building global telecommunications networks.

Watanabe's plan is not likely to lead to an early settlement of the ''second KDD'' question as C and W still opposes the unification of the two firms with the apparent backing of the British Government.

British Prime Minister Margaret Thatcher warned in a recent Parliament session that Britain will take retaliatory steps unless C and W is allowed a major share in Japan's telecom market. The U.S. is going along with Britain on the matter. Commerce Secretary Malcolm Baldrige recently expressed complaint in a letter to Posts and Telecommunications Minister Shunjiro Karasawa.

Watanabe told newsmen that C and W's opposition to unification is a matter that should be tackled by the Japanese and British Governments. His job is to unify ITJ and IDC, he added.

/12858

CSO: 5560/068

## BRIEFS

AUTOMATIC TELEPHONE SYSTEM--Now the automatic telephone system is in use throughout the city of Houa Phan. It was installed in 1 month, last December, by the technicians and workers of the postal corporation of Houa Phan Province. This is the first time that an automatic telephone system has been set up and used throughout the city of Houa Phan. There are more than 100 booths. The installation of the system is a present to celebrate the 10th anniversary of the establishment of the LPDR. It is intended to make communications between the various offices, organizations and services around the province quick and convenient. [Text] [Vientiane PASASON in Lao 4 Jan 86 p 1] 8149

SHORT WAVE RADIO--The committee responsible for radio of Vientiane City in conjunction with the national radio committee set up a short wave transmitter for Vientiane City. Its assembly is now complete. It was started in July and was finished by 5 October 1986. The budget for the project amounted to more than 700,000 kip; this was presented by the party committee and administrative committee of Vientiane City to the propaganda and training committee and the information, newspaper and radio service of Vientiane City, which was in charge of assembly with the cooperation of the technicians of the radio broadcasting unit in the state administrative committee for information, newspapers and television. This unit in the state administrative committee for information, newspapers and television presented the transmitting equipment as a gift to the First Party Congress of the party committee of Vientiane City at no cost. Now the transmitter is broadcasting experimentally at 4.400 kilohertz or at a wavelength of 61 meters. The transmitter can be received throughout the country. [Excerpt] [Vientiane VIENTIANE MAI in Lao 7 Oct 86 pp 1,4] 8149

CSO: 5500/4315

LARGEST COMPUTER NETWORK IN PRC ESTABLISHED

Hong Kong SOUTH CHINA MORNING POST in English 24 Mar 87 Supplement p 1

[Text] A NATIONAL Chinese language information processing system has been established, forming the largest computer network in China, a national conference of computer experts was told in Beijing last week.

The new system, approved by the State Council in January, consists of 28 centres linking 12 provinces and municipalities across the country.

With headquarters in Beijing, the network was set up by the Ministry of Space Industry to accelerate information flow and strengthen management.

When applied in other areas or departments of the country, the network will help with information processing and generate more useful statistics, a Space Industry Ministry spokesman said.

The spokesman said the computer network was capable of collecting, storing, analysing and transmitting data. Programmed software in the system could help rearrange data and other information in a desired order, the ministry spokesman said.

Experts at the meeting said they believed the design and capacity of the network surpassed present international levels of computer net-

works operating in the Chinese language.

They said the network was based on the HXW Chinese character information processing system designed by the Hua Feng Computation Centre in Beijing.

Chinese officials said the centre imported a Burroughs computer system from the United States, helping to set a successful example of applying data processing in the Chinese language on a national scale and linking many existing microcomputers and data pools.

It could be used in many manufacturing industries as well as banking, insurance and service businesses for production reports, inventory control, budgeting, planning and many other functions involving data management, experts said.

After analysis, previously unheard of volumes of statistics could be used to map long-term development plans for economic reform.

The system was also expected to help enterprises evaluate their production and management performance and, in the long run, improve efficiency and quality of production.

The network, the ministry spokesman said, was in line with national goals of applying computer technology across the country.

/13104  
CSO: 5550/0114

FOREIGN COMPANIES DEVELOP PRC COMMUNICATIONS

HK070751 Hong Kong ZHONGGUO XINWEN SHE in Chinese 0610 GMT 6 Apr 87

[Report by Xie Meizuan (6200 5019 9449): "Britain's Cable and Wireless Vigorously Develops the Chinese Market"--ZHONGGUO XINWEN SHE headline]

[Text] Hong Kong, 6 Apr (ZHONGGUO XINWEN SHE)--Britain's Cable and Wireless Group is vigorously developing the Chinese market. In recent years, it has signed with the relevant departments in Guangdong and Beijing over 10 cooperative projects worth several hundred million yuan, including the introduction of advanced international telecommunications equipment and technology to China and the joint development of many telecommunications networks.

This year, Cable and Wireless and the Guangdong Posts and Telecommunications Management Bureau, as well as British General Electric Telecommunications Limited, have signed a contract for the installation of an optic fiber cable system between Guangdong and Hong Kong, providing 46,080 lines for data and facsimile transmission. Cable and Wireless also cooperates with Hong Kong Communication Services Limited and the Guangdong Posts and Telecommunications Bureau in developing modern digital international communication networks in China and the latest technology on mobile telephone business. At the end of this year, mobile telephone users in Hong Kong will be able to directly dial to Guangzhou. Moreover, the wireless telephone communications between Nanjing and the Shanghai Chang Jiang Delta, which is scheduled to be completed this year, will strengthen the communication links between Nanjing and Jiangsu, Anhui, and Zhejiang so that transmission of information in the coastal cities of southeastern China will be linked together.

The group began to develop its business on a large scale in China in 1981. At that time, the group and Guangdong jointly built a high-capacity microwave wireless electric communication system linking Hong Kong, Shenzhen, and Guangzhou. The project was completed in 1983. In September 1982, it again cooperated with the Guangdong Posts and Telecommunications Management Bureau to provide a 975 km-long microwave system stretching across Guangdong Province.

In November 1983 Cable and Wireless, the Shenzhen city government, and the Guangdong telecommunications department set up the Shenda Telephone Company Limited to provide the Shenzhen Special Economic Zone with a whole range of public telephone services.

The following year, in conjunction with the Hong Kong Telephone Company, it installed a long-distance telephone exchange in Guangzhou so that direct dialing telephone services between Hong Kong and Guangzhou smoothly went into operation in August of the same year, providing convenient communication services for the vigorous development of trade and tourism between the two places. In the same year, it signed an agreement with the Guangdong Posts and Telecommunications Bureau for the Zhu Jiang communication project, under which it provided Foshan, Dongguan, and Zhongshan with the latest digital telephone equipment, so that the capacity of the telephone systems in the three cities increased to 20,600 lines. Moreover, they also cooperated in developing semiautomatic dialing equipment in the 10 cities of Haikou, Zhanjiang, Jiangmen, Zhongshan, Foshan, Zhaoqing, Shunde, Dingguan, Huizhou, and Shantou.

It has been learned that, beginning in late 1970, with the frequent contacts between Hong Kong and Guangdong, demands for communication lines between the two places increased drastically. Although the small coaxial cable and the microwave system, which were respectively commissioned in 1974 and 1983, provided 3,000 communication lines between the two places, it is expected that the lines will reach saturation point in 1988. For this reason, it is necessary to lay new cables to expand the capacity.

Fung Hak-ming, general manager of the engineering department of Cable and Wireless, said: The Cable and Wireless Group has been in business for over a century in Hong Kong. It has consistently devoted itself to developing telecommunications and has succeeded in building a perfect telecommunications framework in Hong Kong, which has helped turn Hong Kong into an international financial and trade center. The group has full confidence in the future of Hong Kong and will, as always, make great efforts to develop the communication business between the mainland and Hong Kong.

/6662

CSO: 5500/4156

JIEFANGJUN BAO ASSESSES FIRST SATELLITE STATION

HK180336 Beijing JIEFANGJUN BAO in Chinese 10 Mar 87 p 1

**[Report: "China Completes the Building of Her First Ground Satellite Communications Station"]**

**[Text]** China's first ground satellite communications station, which was built to ensure China's astronautic communications, recently passed the test of being linked to the international satellite communications network through the satellite launching center in Jiuquan. On 5 March, China received a special letter from the International Satellite Organization, which officially approved the connection of China's ground station with the existing international network.

In the past, China's astronautic communications mainly relied on wired and short-wave radio communications facilities. With the rapid development of the astronautic industry, it is urgently necessary for China to change the astronautic communications conditions. Therefore, the authorities concerned have decided to set up ground satellite communications stations in various launching centers, observation and monitoring centers, and space survey stations. The relevant factories subordinate to the Ministry of Astronautics Industry, relying on their own technical strength and learning from absorbing advanced foreign technologies, have solved a series of technical difficulties and problems for the building of our country's own astronautic communications network. The ground satellite communications station in the Jiuquan Satellite Launching Center is the first ground station of this kind in our country's astronautic communications network.

Satellite telecommunications will not only guarantee the unblocked conditions of telephone, telegraph, telex, and digital communications links and improve the quality of telecommunications, but can also immediately and clearly transmit data about the working conditions of the rockets and satellites before launching and about their flight orbits, parameters, and graphics to various observation and controlling stations. This will raise the level of astronavigation organization, command, observation, controlling, and automation. This technology will also enable our country to more smoothly promote the business of launching satellites for foreign clients.

/9738

CSO: 5500/4152

XIAMEN-NANPING OPTICAL CABLE UNDER CONSTRUCTION

HK210314 Hong Kong ZHONGGUO XINWEN SHE in Chinese 0752 GMT 15 Apr 87

[Report: "Construction of a Project of Xiamen-Nanping Long-Distance Optical Cable Digital Communications System Has Started"]

[Text] Fuzhou, 15 Apr (ZHONGGUO XINWEN SHE)--The construction of the Xiamen-Nanping long-distance optical cable digital communications system, the largest communications project in Fujian Province, has officially started today.

This optical cable digital communications system starts from Xiamen, passes through Zhangzhou, Longyan, Yong'an, and Sanming, and reaches Nanping. It has a total length of nearly 517 kilometers and the investment in it is approximately 45 million yuan. After the whole system is put into operation in 1990, it will link together the digital programmed exchangers of Fuzhou, Xiamen, Quanzhou, and Zhangzhou, thus gradually forming a long-distance communications network which is basically automatically connected. It will also link with the small Xiamen-Shantou co-axial cable in the south, the small Fuzhou-Hangzhou co-axial cable by means of the Nanping-Fuzhou optical cable which will soon be built in the east, and Jiangxi in the west to join the Nanjing-Wuhan-Chengdu optical cable communications system, which will soon be built to form an important component part of China's communications network.

The construction of the first phase of the project, which has started today, is an optical cable trunk line leading from Nanping to Yong'an. The total length of this section is 53 kilometers. It will be completed within this year.

/6662  
CSO: 5500/4156



REVISING PROPOSAL TO THE RECOMMENDED MEASUREMENT METHOD OF ERRORS OF PAL  
CHROMINANCE SIGNAL DEMODULATION ANGLE

Tianjin TIANJIN DAXUE XUEBAO [JOURNAL OF TIANJIN UNIVERSITY] in English,  
No 1, Jan 87 pp 115-126

[English abstract of article by Yu Sile [0205 2448 2867] and Li Guiliug  
of the department of Electronic Engineering]

[Text] This paper analyses the principles of the recommended method for measuring errors of PAL chrominance signal demodulation angle, which is constituted in IEC [Production and Application of Light] Publication 107-1[1]. Analysis shows that by means of above method, the measured phase matching error and amplitude matching error of delayed and undelayed signals are mixed with other errors. Thus the measurement results, especially for phase matching error, cannot correctly reflect the errors in associated circuits and cannot be used for assessing the properties of the comb filter or the receiver. In this paper, authors propose that the measuring signal and the measured point in the receiver should be changed. Practical measurement and observation of the line crawl on screen show that the modified method is more effective and more reasonable. (Paper received 2 September 1985.)

REFERENCES

- [1] IEC Publication 107-1, second edition, 1977, "Recommended Methods of Measurement on Receivers for Television Broadcast Transmissions."
- [2] Yu Sile, 1978, DIANSHI JISHU [TELEVISION TECHNOLOGY], No 4, pp 18-38.

/6091

CSO: 5500/4153

PEOPLE'S REPUBLIC OF CHINA

BRIEFS

CENTRAL COLOR TV PROJECT--Beijing, 14 Mar (XINHUA)--According to a report by the Central Television Station, the color television center project at the station is expected to be completed and put into operation this year. Since construction of the project began in May 1983, comrades of the central authorities have shown great concern and hoped for its early completion. The department concerned in the Beijing Municipality has decided to launch a campaign to strive for the completion of the project in June, so that it can be put into use in the third and fourth quarters. [Summary] [Beijing XINHUA Domestic Service in Chinese 1655 GMT 14 Mar 87 OW] /9738

CSO: 5500/4152

## ARGENTINA

### SIEMENS PLANS TO INVEST HEAVILY IN TELECOMMUNICATIONS SECTOR

Buenos Aires MERCADO in Spanish 19 Mar 87 pp 55-58

[Article by Edgardo A. Silveti]

[Excerpt] Siemens' Presence in Argentina

The Siemens organization is involved in Argentina's industrial sector through a number of different companies: Equitel (telephone lines, telephones, communications exchanges); Redcom (planning, installation, and maintenance of external equipment); Osram (incandescent bulbs, fluorescent tubes, headlights for cars, traffic lights and special equipment for photography and filmmaking); Cimet (medium, low and high voltage copper and aluminum conductor cables, coaxial cables and special cables for communications); Electromac (threephase motors and generators); Standard Electric (copper cables for communications); ENACE [Argentine Nuclear Power Plants Enterprise] (planning, design and construction of nuclear power plants); and GTE of Argentina (hybrid circuits, radiocommunications, and telephone multiplex equipment).

In some cases Siemens owns all of the stock, while in others it is a minority stockholder, essentially providing technology. (See the chart on the following page entitled: "Siemens in Argentina"). Siemens' investments in Argentina may be calculated at approximately \$200 million in assets at current values, and an additional \$150 million in credits granted to clients. About 5,700 people work directly for the Siemens complex in these eight companies, in which Siemens owns anywhere from a maximum of 100 percent to a minimum of 25 percent. Its annual billing during the past fiscal year was a total of 260 million australes.

#### New Investments

Siemens' activities in Argentina are based on two interconnected actions, investment and technology transfers. The engineer Herbert Steffen, the head of the Siemens group in Argentina, explained that "just in the Equitel plant alone (a specialist in telephone lines, exchanges, telephones, and simple and highly complex telephone equipment), over \$25 million has been invested in the last 6 years, and in the next 2 years there will be a new wave of investment,

amounting to \$27 million." These figures have a very special dimension, for the largest part (75 percent) of this amount has had and will continue to have as its destination high technology production and testing equipment; only a small part of it is used for building construction.

#### Siemens in Argentina

Company	Siemens' Participation	Participation of Other Parties	Employees	Annual Billing--in Australes
Siemens S.A, Central administration; factory in Villa Adelina	100%		1,078	46,342,000
Equitel & Recom Factory in San Martin	100%		1,882	80,861,000
GTE Factory in City of Buenos Aires	100% through Siemens of Germany		190	11,000,000
Osram Factory in Boulogne sur Mer	66% through Osram of Germany	34% General Electric of United States	650	36,197,000
Cimet Factory in Leon Suarez	48%	52% Local stockholders Gurovich family	255	14,636,000
Standard Electric of Argentina Factory in San Isidro	47%	53% Local stockholders Juncal group	749	42,029,000
Electromac Factory in Lobos	38%	62% Local stockholders & through Stock Exchange	195	5,741,000
ENACE Offices in City of Buenos Aires	25% through KWU of Germany	75% National Atomic Energy Commission	701	23,593,000

"The entire Siemens group in Argentina," added Steffen, "has invested \$50 million between 1983 and 1986, and for the 1987 to 1990 period, its investment will be another \$53 million.

The Equitel plant, located at kilometer 18.5 on Route 8 in the San Martin district, opened in 1958. Its origin goes back to a contract signed by the then National State Telephones Directorate and Siemens & Halske of Germany and Siemens of Argentina, to supply switching equipment and telephones. The agreement stipulated that Siemens would set up an industrial plant with a high level of Argentine participation.

Since that time, the "Route 8" factory, as the Siemens people familiarly call it, has supplied over 1 million telephone lines and telephones for ENTEL's public network, and thousands of other lines and phones for private exchanges.

Nonetheless, everything is changing as a result of an international bid for which the process was started in 1979, with contracts awarded in January 1982, which were renegotiated in 1986, amidst tough competition. On the basis of prices, modern technology, and reliability in deliveries, only two firms managed to survive until the end.

One was NEC-Perez Company and the other was Equitel and Siemens AG. The latter got a contract to supply and install 150,000 telephone lines using electronic technology and 432,000 telephones. At this time the Siemens' work load for the 1987-1988 period is 260,000 digital technology lines (MSWD); 40,000 electromechanical technology lines (MSD); and 600,000 telephones.

#### New Technologies

Equitel has already begun its mass production of an electronic telephone (Masterset 113) in which the conventional bell will be replaced by a piezo-electric ringer. Instead of electromechanical components, this telephone uses integrated circuits; its modern design (it is available in light gray, beige, dark red, green, light brown, and dark brown) and the technological development were both done in Argentina, after 18 months of work.

Its most significant feature is its use of digital technology which transforms the voice into signals which are coded and decoded during transmission. This means that it will be possible for Argentina to have modern communications in the future. "Today's world," commented Steffen, "increasingly needs a larger volume of information that has to be transferred on everyday activities, such as stock market operations, bank transactions, business management, or education. This is creating a need for a much more advanced and efficient system. For side by side with traditional telecommunications services such as telephone, telegraph and telex, we are seeing an increasing use of low and high-speed data transmission, remote control and command of industrial operations, teletex and telefax, mobile phone systems, image transmission by cable, video-phones and videoconferences."

In most countries these services are provided by at least two or more separate networks. This requires a large infrastructure, doubles investment

and maintenance costs, and also has the built-in limitation that customers need separate connection lines for their terminal equipment. Because of the advances in microelectronics and fiber optics, future systems will use an ISDN [Integrated Services Digital Network]. This means that there will be a single network operating with high transmission speeds (64,000 bits per second) with a definite improvement in transmission quality and a reduction in costs because of a decreased use of electromechanical components.

The first step toward a unified network for voice, text, image and data transmission is the introduction of digital transmission and switching on the present telephone system. Siemens is now working on this job in Argentina. Based on what will in the future be known as ISDN, it has developed the EWSD system, which has now been purchased by over 30 companies in 22 countries, which have installed 4.5 million telephone lines.

The name EWSD designates a family of digital electronic public switching exchanges controlled by computers which use programs for local, long-distance, mixed and international services. They are flexible and can be adapted to meet the conditions found in each country, and do permit a gradual evolution toward a single ISDN system.

Now in Argentina

According to the terms stipulated by the contract for the telephone lines and telephones, Siemens pledged to make the investments needed to build EWSD exchanges in Argentina, using a high degree of domestic integration. This is now a reality. Equitel has already built the first exchange of this type; it will operate in Mar de Ajo with 2,000 local lines and 1,500 long-distance lines.

In 1983 ENTEL contracted with Siemens to supply a digital EWSD exchange made in Germany, as an interest-free loan with an option to purchase. This exchange was installed in Cordoba, where it serves as an automated long-distance and international exchange. It has 3,192 interconnections, 200 of which are used for international traffic via the Bosque Alegre ground station in Cordoba province.

This international center provides connections with major nations of the world, offering an alternate route to the Balcarce station. It has also improved connections with nearby countries by means of ground links. After a year of testing while in actual operation, it was officially inaugurated in October 1985.

It is worthwhile to get a brief idea of the complexity of modern telephone exchanges. They locate their own defects, report them via a telephone line to the Diagnostic Center where the problem is recorded and corrected from a distance, without the customer even being aware of any problem. Steffen

announced that not only is Siemens already building them in Argentina, but it has also begun the development of a digital technology telephone exchange that will be able to operate as an independent exchange with a capacity of 100 to 1,000 customer lines.

This type of exchange, which the worldwide Siemens group does not list in its product catalog, is being developed for Argentina's rural market and for small towns, as well as for export. A staff of 30 engineers is working on this at the Equitel Technical Development Center at the San Martin plant. The first prototype should be ready by mid-1988.

Other developments include communications software and a small private exchange which has been named the "Multiset," as well as equipment for direct links between conventional analog-type exchanges and digital exchanges. In all, a staff of 100 engineers is working on research and development in specific areas.

From "La Portena" to Atucha II

Siemens' first involvement with Argentina dates back to the time of the Urquiza presidency. In August 1857 a telegraph system manufactured in Germany by Siemens & Halske was put into service, along with the brand new Western Railway. Among other things, this telegraph announced the departures of the train pulled by the legendary "La Portena" locomotive, starting from the terminal station in the vicinity of what is now the Colon Theater, until it completed its trip in Flores.

Since then Siemens' presence in Argentina has grown and spread by means of public works, electrical and communications equipment projects. The following list gives some of its more important projects:

- a. Construction and equipment of the international Transradio company (1920).
- b. 2,200 meters of protective walls built of reinforced cement along Avenida Costanera Sur (1924).
- c. Supply and laying of telecommunications cable under the river between Buenos Aires and Colonia in Uruguay (1931).
- d. Construction of the Cacheuta Hydroelectric Power Plant in Mendoza, which at that time was the largest of its type in South America (1932).
- e. Construction and supply of underground equipment from Retiro to Constitución, and from Florida to Palermo (1934).
- f. Construction of the Obelisk of the city of Buenos Aires, Avenida 9 de Julio, the Colon Theater, Opera Movie Theater, and the School of Medicine of the University of Buenos Aires (1935-1937).

- g. Supply and laying of 1,200 kilometers of coaxial cable and auxiliary equipment with three links, connecting Buenos Aires with Rosario, Santa Fe and Canada de Gomez to the north, with Mar del Plata to the south, and with Chivilcoy to the west (1954 to 1963).
- h. Construction and equipment of the San Nicolas thermal power plant with an installed power of 300 MW (1956).
- i. Opening of the Equitel plant on Route 8 in the San Martin district (1958).
- j. Electrification of the Cities Service oilfields in Mendoza and equipment of the telephone exchange for the presidential mansion (1968).
- k. Start of operation of the Atucha nuclear power plant using natural uranium as a fuel, with an installed power of 320 MW (1974).
- l. Installation in the French Hospital of the first computerized tomography equipment in Argentina.
- m. Supply of six generators of 200 MW each for the El Chocon hydroelectric power plant (1977).
- n. Lighting work for the River Plate, Cordoba and Mar del Plata stadiums and telephone systems for six substations for the World Soccer Championships (1978).
- o. First of Argentina's local telephone exchanges with control by computer programs, equipped with the EWSD digital switching system in ENTEL's Costanera Exchange (1979).
- p. KWU [Kraftwerk Union] won the bid to build the Atucha II nuclear power plant using natural uranium, with an installed power of 600 MW (1979).
- q. Osram opened its model plant in San Isidro, with an investment of \$13 million (1980).
- r. A consortium led by Siemens won the bid to provide half of the 20 generators of 138 MW power for the future Yacyreta hydroelectric power plant (1981).
- s. ENTEL awarded to Equitel and Siemens AG a contract for the supply and installation of 150,000 EWSD electronic technology lines. This represents Argentina's move away from manufacturing analog technology, going to digital technology; contracts were also awarded to supply 432,000 telephones (1982).



- t. The first factory of what is today the Siemens industrial complex opened at the start of the century. It produced porcelain for making fuses. In addition, it also manufactured electric meters, cables, electric motors and portable radio stations. These radio stations were exported--to the army of China!

7679

CSO: 5500/2035

BOLIVIA

SATELLITE STATIONS TO PROMOTE INTEGRATION

La Paz PRESENCIA in Spanish 5 Apr 87 p 6

[Text] Trinidad, 4 Apr. ENTEL [National Telecommunications Company] has just approved a plan to establish domestic "satellite" stations in Trinidad and Riberalta in order to serve the towns of the departments of Beni and Pando, company spokesmen reported here.

This announcement was reiterated by ENTEL's regional representative, Mauro Rappu, upon his return from a national meeting of ENTEL representatives held in Santa Cruz de la Sierra. The primary purpose of the meeting was to coordinate administrative and technical control mechanisms of the state enterprise.

Rappu said, though, that some regional agencies are still held subordinated to the "good will and support of the central office," especially in matters related to financing. This causes delays in adapting improved telecommunications systems in the region.

He expressed his hope that in the immediate future the regional company "will be on the same level as others in Bolivia," in both technical and administrative aspects.

He explained that the project to install a domestic satellite above the region will make it possible to serve more of the region's towns, especially those which do not have communications systems now, or whose systems are obsolete.

At the same time, the ENTEL representative said that the company hopes to receive understanding from state agencies in supporting the prompt execution of its development plans, at least in this part of the country.

Limitations

At the present time ENTEL's customers have a number of complaints about the system's defects, the result of its limitations.

There is such a great demand for telephone, telex, and telegraph services that there are constant complaints pouring in. Local officials are now relying on the government's promise of a forthcoming expansion of the capacity of the channels connected to the national microwave network.

7679

CSO: 5500/2036

## BOLIVIA

### BRIEFS

TELEPHONE PROJECT 85 PERCENT SOVIET--Members of COTAVAC [Automatic Telephone Cooperative of Cochabamba's Upper Valley, Ltd] have reported that they are speeding up their efforts related to the forthcoming creation of their communications system. It will initially have 2,000 members and will later be expanded to reach another 8,000. The project's total cost will be US \$1,100,000, of which 15 percent will be met by payments to be made by the future users, and 85 percent will be covered by the firm Mass Privorintong, Inc, of the USSR. "We have begun the appropriate negotiations to make telephone service in the upper valley a reality. We now have \$30,000, and we need to raise another \$68,000 so that the first batch of equipment can be shipped from Russia," reported the representatives of COTAVAC Ltd. The project will be financed by a 5-year low-interest loan, with a 1-year grace period. That will help with arrangements for the agreements that have to be signed. The telephone exchanges will initially be installed in major provincial cities, with substations to be placed every 3 kilometers so that the first users can get their equipment soon. There are also plans to arrange a special agreement with COMTECO [Cochabamba Mixed Telephone Cooperative] in order to provide an interconnection, so that there can be communications between the two systems. "Many people are sceptical about this project's success; we are going to show them that it isn't just another dream of the upper valley. Instead, with good will and honest work, not only can we have better communications, but also suitable facilities for all the communities involved," said the COTAVAC directors. [Text] [Cochabamba LOS TIEMPOS in Spanish 27 Mar 87 p 6] 7679

MICROWAVE SYSTEM EXPANSION PLANNED--ENTEL [National Telecommunications Company] plans to execute its Domestic Satellite Project, which will benefit about 20 towns in Beni and Pando, in part of Santa Cruz, and regions in southern Bolivia. This was reported by ENTEL's general manager, German Quiroga, who said that the project will be executed in two stages during this fiscal year. He also said that this year's operating plan includes the expansion of systems and the enlargement of already existing systems. The first of these is the Domestic Satellite Project, whose first phase will include 12 towns in eastern Bolivia, and the second phase, 10 more. ENTEL also plans to expand the national microwave network and long-distance telephone exchanges. All this information was reported by ENTEL's general manager during a meeting of regional representatives held in Santa Cruz recently. At that time, reports were also heard from the participating districts about the application of resolutions adopted in a similar meeting held in La Paz last year. [Text] [La Paz PRESENCIA in Spanish 29 Mar 87 p 11] 7679

MANAGER CHARGED WITH BRIBERY--Trinidad, 10 Mar 87. The board of directors of COTEAUTRI [Telephone Cooperative of Trinidad] has ordered an investigation to determine the truth or falsity of a charge against its present manager, Humberto Anez Alvarez, for alleged acceptance of bribes. Anez Alvarez, the brother of the Movement Senator Luis Anez, is said to have received \$40,000 from the Erickson company, like the former president of the cooperative, Laureano Villar Garcia, who has since died. The money was allegedly given so they would support the purchase of equipment, according to an account transmitted by an international agency from Bogota, based on a story published in a Colombian newspaper. The COTEAUTRI manager immediately rejected this allegation and denied the charges, but the board of directors has ordered an extensive investigation of this matter, its chairman, Alfredo Ascarrunz, told reporters this morning. After the publication of this report, the directors discussed the matter and then asked for full and documented reports on the case, he said, revealing that the Erickson representative in Bolivia, Lourdes de Zavaleta, has been called to Trinidad to answer questions on the matter. Meanwhile, within the next few hours they expect to have a report "with documentation" from the manager, Anez Alvarez. This will be discussed in a press conference tomorrow (today), he announced. Ascarrunz, though, said that the story does contain some contradictions "in terms of dates and names," mentioning the death of the former president of the cooperative and former mayor, Laureano Villar, as "not coinciding" with the charge. In conclusion, the director said that the board does see a need to take appropriate action, but that no decisions will be made before the investigation has been completed. [Text] [La Paz PRESENCIA in Spanish 12 Mar 87 sec 2 p 1] 7679

ENTEL SERVICES TRIPLE--This year ENTEL [National Telecommunications Company] plans to triple its service capacity; to do this it has drawn up a budget of \$32 million. This information was given to PRESENCIA by ENTEL's general manager, German Quiroga Gomez, who called 1987 the Year of Communications in Bolivia. He said Bolivia has had a "surge" in communications, causing demand for services to be intense. This has required the preparation of a schedule for telecommunications projects so that it will be possible to deal with the community's needs efficiently. "Part of this surge has been caused by business expansion, which has now created a need for more communications channels, both inside Bolivia and with other countries." He said that during the 1987 fiscal year, the number of international channels will be increased by 100 percent, while domestic channels will be increased 50 percent. These projects, plus the expansion of telex and telephone services, will triple Bolivia's present capacity. In April, ENTEL will request bids for the first phase of its rural telephone project, in order to replace services now being provided by DITER, whose equipment is considered obsolete. In conclusion, the ENTEL manager reported that he has met with executives of the Automated Telephone Company in La Paz, about starting international direct dialing service in Bolivia. This will be possible with the addition of the new communications channels just mentioned. [Text] [La Paz PRESENCIA in Spanish 13 Mar 87 p 7] 7679

CSO: 5500/2036

MONTEGO BAY TELEPORT PROJECT GAINS APPROVAL OF INTELSAT

Government Commitment

Kingston THE DAILY GLEANER in English 1 Apr 87 p 3

[From report on 30 March 1987 Throne Speech to Jamaica Parliament by Governor General Sir Florizel Glasspole]

[Excerpt]

Concerning the Teleport Project the Governor General said "during the course of this week, governments participating in Intelsat (the international regulatory body for satellite communication) will have before them for decision the recommendation of the Board of Governors... which will provide two-way private line voice, video, facsimile and data communications between Jamaica and the United States of America. This is the last step in the chain of approvals required for the establishment of the teleport which is scheduled for Montego Bay. It is expected that this project will employ up to 4,000 persons."

INTELSAT Action

Kingston THE DAILY GLEANER in English 4 Apr 87 pp 1, 3

[Text]

PRIME Minister Edward Scaga announced yesterday that the INTELSAT Assembly of Parties meeting in Washington yesterday unanimously approved the operation of the proposed Jamaica Teleport to be sited in Montego Bay.

This information was received from the Hon. Parnel Charles, Minister of Public Utilities and Transport who is leading Jamaica's delegation to the International Telecommunications Satellite Orga-

nisation (INTELSAT) meeting, according to Jampress. The Assembly of Parties consists of the Governments of the 113 countries which are shareholders in INTELSAT.

This action by INTELSAT, following approval for the project by the Government of Jamaica and the Federal Communications Commission of the United States, now clears the way for implementation of the project later this year once the overseas partners settle an internal arrangement among themselves.

The Teleport project will offer private line business services between the U.S. and Jamaica for voice, video, facsimile and data to specialised users located in free zones in Jamaica, connecting them with users in the U.S. Services such as tele-marketing, airline and hotel reservations and tele-conferencing

would become possible through the use of U.S. domestic satellites and Jamaican operators and data processors, lined through an earth station (dish) to be located in Montego Bay.

The Teleport project has the potential to provide four thousand jobs in Jamaica by the end of the third year when it should be fully operational. These jobs would be predominantly for young girls with an aptitude for keyboard typing and who reside in western Jamaica and the locations around other free zones.

The Teleport will also make the growing data processing industry competitive through cheaper cost of transmission.

The project will be a joint venture between the Government of Jamaica (20%) and American and Japanese interests (80%).

/9317

CSO: 5540/091

SURVEY COULD RESULT IN CLOSURE OF TWO TV CHANNELS

Port-of-Spain SUNDAY GUARDIAN in English 12 Apr 87 pp 1, 25

[Text]

Trinidad and Tobago Television (TTT) started a survey yesterday aimed at gaining an insight on viewers preferences.

The wide ranging questionnaire is published in the *Guardian* questioning the public on their viewing patterns and choice of programmes, and the channels operated by the station.

Unconfirmed reports yesterday indicated that results of the survey could well result in the closure of Channels 9 and 14.

Both Chairman of TTT Martin Daly and General Manager John Barsotti could not be contacted for comment.

However, sources noted that while TTT was making efforts to find out what programmes were more acceptable they were also taking opportunity to establish whether the station should continue to operate Channel 9, and even now popular channels on Channel 9 were being switched to CVchannel 13.

When Channel 9 was established the intention was for it to concentrate on educational programmes. Sources noted that the channel has never really served its original purpose.

/9317  
CSO: 5540/092

## ALGERIA

### SWEDISH FIRM TO BUILD TELEPHONE EXCHANGES

#### Three Algerian-Swedish Contracts Signed

Algiers EL MOUDJAHID in French 24 Mar 87 p 4

[Article by H.T.M.]

[Text] Three contracts between the ministry of Posts and Telecommunications and the Swedish Ericcson Company were signed yesterday in Algiers, in the presence of Mustapha Benzaza, member of the Central Committee and minister of Posts and Telecommunications; Faycal Boudraa, minister of Heavy Industry; the ambassador from Sweden to Algeria; the president of Ericcson, and several high ranking staff members of both parties.

In a speech given at the end of the signature ceremony, Mr Benzaza alluded to Algerian-Swedish relations which, he said, are a concrete example of North-South cooperation. The minister recalled the inter-governmental telecommunications agreement concluded during the most recent visit of the chief of state in Sweden, as well as the role of the late prime minister, Olof Palme, with respect to the rapprochement of the two countries.

The signing of these contracts will strengthen already existing bilateral relations even more. "It is therefore not merely a simple contract, but rather a real transfer of technology, since Ericcson will guarantee the follow-up of projects, training, maintenance, etc." Mr Benzaza ended by emphasizing the real desire of the partner to satisfy the expectations and the concerns of the Algerian party.

These contracts will make it possible for Algeria to enter fully into the era of technology in the field of telecommunications and to absorb the future growing demand of its citizens.

According to the terms of these three contracts, L.M. Ericcson, together with the participation of the Sonatit Company in part of the project, is to set up three national transit centers in Algiers, Oran, and Annaba, an urban transit center in Algiers, a 13,000 circuit international transit center, and three subscriber centers, with 90,000 lines, in the capital and its periphery.



These centers are equipped with numerical systems, a big first in this field in Algeria, which will provide greater efficiency and better performance.

#### Joint Venture Partnership Formed

Algiers EL MOUDJAHID in French 25 Mar 87 p 4

[Excerpt] After the signing on Monday of three contracts by the directors of the Ministry of Posts and Telecommunications and the L.M. Ericcson Company, the National Telecommunications Company (ENTC) yesterday morning signed, at the headquarters of the Ministry of Heavy Industry, an agreement with the same Swedish company for the establishment of a joint economic company: the Algerian Telecommunications Industrial Company (SITEL).

The following attended the signature ceremony: Mustapha Benzaza, member of the Central Committee and minister of Posts and Telecommunications; Faycal Boudraa, minister of Heavy Industry; Ali Oubouzar, minister of Planning and National Development; the ambassador from Sweden to Algeria; the president of L.M. Ericcson; and several high ranking staff members of both parties.

Thanks to this agreement, an important change will take place in the next few years which will result in the numerical electronic technology of communications taking precedence over electromechanical technologies. The SITEL, with production to start at the beginning of 1989, receives 65 percent of its funds from Algerian national capital and 35 percent from the assets of the L.M. Ericcson Company. This joint economic company, which has an Algerian majority, will be located in Tlemcen, because of the proximity of the present complex of the ENTC.

These series of contracts and agreements will further strengthen the ties of friendship and cooperation in all fields between Algeria and Sweden. They fall within the framework of the intergovernmental telecommunications agreement concluded during the most recent visit of the chief of state in Sweden, said Faycal Boudraa during the signature ceremony. He also added that the L.M. Ericcson Company is not a new partner. It has always proved to be available for support, by promoting a real transfer of technology on behalf of the country and its staffs. The minister emphasized that this important phase will open up other doors that will be favorable to the rapprochement of the two countries and wished the new company complete success.

Let us note that the SITEL will produce 200,000 lines a year, with a 60 percent rate of integration and a staff of 300 persons.

8255

CSO: 5500/4607

## MONITORS REFUTE DENIAL OF PRO-KHALISTAN BROADCASTS

New Delhi PATRIOT in English 22 Mar 87 p 5

[Text]

The Sri Lankan High Commission in New Delhi has issued what communication experts consider an unconvincing denial of a report about a powerful short-wave transmission emanating from Sri Lankan territory and airing pro-'Khalistan' broadcasts.

The report carried in Patriot on 6 March had cited the experts as opining that the broadcasts came from a pirate station using the Sri Lanka Broadcasting Corporation's transmitting facility at Ekla near Colombo.

The High Commission press release, curiously unsigned and received in Patriot on 9 March, asserted "categorically" that "there is no truth whatsoever in the report that pirate radio station is using the Sri Lankan Broadcasting Corporation's transmitting facility near Colombo for these broadcasts".

Evidence of pro-'Khalistan' broadcasts from Sri Lanka has been reported not only from India but from Sweden and Australia as well.

In Bulletin No. 1902, dated 26 August, 86, Radio Sweden International's weekly programme on short-wave listeners, Sweden Calling Dxers, carried an item under the 'unofficial radio' section: "A station calling itself Voice of Tamil Eelam on 9700 khz. The previously heard VOTE says, it is operated by Sri Lankan government".

What has given credence to the speculation that clandestine radio activity is aided by SLBC transmitters is that Radio Australia's monitor played a cassette of the recording on 16 November last in Talkback, a programme for short-wave listeners. The presenter of the programme said that such a powerful hostile radio activity targeted to India and heard loud and clear in Australia indicated that this station, the 'pseudo' Voice of Tamil Eelam, has acquired high-power transmitting facility.

Scores of other short-wave monitors in India have also said that a powerful signal, has been monitored on their radio direction-finders coming from the south, successfully overcoming jamming attempted by other clandestine stations operated by Tamil militants.

The High Commission adds that "the Sri Lankan government has consistently followed a clear and principled stand on the Khalistan issue. Sri Lanka has not allowed and will never allow its soil to be used for pro-Khalistan broadcasts or for any other broadcasts which would encourage terrorists organisations preaching separatism".

Clandestine pro-'Khalistan' programmes have been consis-

tently heard by radio listeners in India. These broadcasts are intruding into exclusive Ham Bands in the electromagnetic spectrum.

In its issue of November last, the internationally famed radio-listeners' magazine, The Asian DX Review published from Calcutta, carried the following extract by one of its monitors from south India. "On 7 October I heard this station (Voice of Tamil Eelam) with the following announcements and slogans... 1) Khalistan is our brother country; 2) We are going to introduce new transmission in Punjabi and many other languages. These transmissions are intended for north India listeners and foreign listeners; 3) We deeply mourn for death of Sikh terrorists who were shot dead by Indian Border Security Force; 4) We justify the recent assassination of Gen A S Vaidya".

In early January, anti-India radio programming was monitored in Mhow in Madhya Pradesh. Experts say that such an ambitious target area (northern India) cannot be reached by operating small hidden stations unless they are aided with a high-power transmitting facility of thousands of watts.

/13104  
CSO: 5550/0115

## BROADCASTING MINISTRY ISSUES 1986-87 ANNUAL REPORT

Bombay THE TIMES OF INDIA in English 2 Apr 87 p 2

[Text]

**F**IVE TV studios will be commissioned during 1987-88, one each at Bangalore, Guwahati and Lucknow. A central production unit comprising two TV studios will also be set up at Delhi, according to the annual report of the ministry of information and broadcasting for 1986-87.

The plan outlay of the ministry for 1987-88 is Rs. 324 crores. Sector-wise allocations are: Doordarshan (Rs. 150 crores), sound broadcasting (Rs. 160 crores), film media (Rs. 9 crores), and information media (Rs. 5 crores).

The seventh plan outlay of the ministry is Rs. 1,471.50 crores. It includes Rs. 700 crores each for Doordarshan and AIR, Rs. 41.5 crores for film media and Rs. 30 crores for information media.

**ANNUAL PLAN**

The annual plan of Doordarshan for 1987-88 also includes commissioning of high powered transmitters at Delhi, Bombay, Calcutta and Madras for the second channel service.

Programme production facilities for feeding the second channel and construction of studio buildings would be taken up at Patna and Agartala, while construction of studio buildings at Simla, Bhopal and Bhubaneswar and a programme production centre at Port Blair would be in progress during the plan period.

The plan also includes commissioning of 2x10 kw transmitters at Delhi, high power transmitters with programme production facilities at Dibrugarh, Tura, Imphal, Shillong, Aizawl and Itanagar. A programme production and feeding centre at Guwahati for telecast of North-East regional service, low power transmitters at Jorhat, Tezu,

Dimapur, Tuensang and Passighat are part of the North-East TV expansion plan.

Srinagar, Jalandhar, Lucknow, Calcutta, Madras, Bangalore, Bombay and Delhi are already linked on a microwave system for simultaneous receiving and telecasting TV signals. It is now proposed to link Hyderabad and Trivandrum.

The annual plan for AIR for 1987-88 includes provision for setting up of new radio studios at Agra, Gangtok, Jamshedpur and Tura, a local radio station at Keenjhar, permanent studios at Bhagalpur, 4x50 MW transmitters at Bangalore, and 50 kw SW transmitter at Gorakhpur.

There is also a provision for the setting up of 50 kw SW transmitter at Tiruchirappalli, 100 kw MW transmitter for Bombay 'A' and Bombay 'B', 2x5 kw FM transmitters at Mussoorie, Kasauli and Jalandhar, 2x3 kw FW transmitters at Nagpur and three kw FM transmitters at Indore, Pune and Bhopal in place of the existing MW transmitters.

With the completion of the seventh plan, the country will have 205 broadcasting stations, 150 MW transmitters with total power of 10,856 kw, 54 SW transmitters with a total power of 7,293 kw, 104 FM transmitters with the ERP power of 3,270 kw.

It is estimated that with the completion of the seventh plan projects, 97.5 per cent of India's population and 91 per cent of its areas will come in the day time ambit of radio signals, emanating from its stations.

The report says the government has decided to set up a new group 'A' service called the Indian broadcasting (programming service). This service

will have separate cadres for AIR and Doordarshan and separate sub-cadres within, to meet the needs of programme management and production. It will offer scope for officers to specialise in disciplines of their preference.

**TELEPHOTO SERVICE**

The report further says that the press information bureau will computerise its photo-indexing, set up telephoto services at its regional or branch offices and improve its teleprinter network to speed up information flow.

The directorate of advertising and visual publicity will conduct operational research in rural communication, develop its audio-visual cell and have greater mechanisation of despatches to 20 lakh addresses.

Song and drama division will set up programmes designing unit and pilot projects for utilisation of folk forms of tribal areas of the eastern zone.

The Indian Institute of Mass Communication will undertake construction work of the second phase of its building project at Delhi. The institute is expected to start two new major courses for master's degree in journalism and post-graduate diploma in Hindi journalism.

The directorate of field publicity will set up new field publicity units and zonal programme designing centres.

The photo division will strengthen its colour units at the headquarters and also set up colour units at regional offices.

Newsprint allocation policy for the licensing years 1986-87 and 1987-88 was announced during the year. Newsprint requirement is expected to be five lakh tonnes during the year. Of this, indigenous production would account for more than 50 per cent (2.75 lakh tonnes).

## COMMUNICATIONS MINISTER HOLDS MADRAS PRESS CONFERENCE

Madras THE HINDU in English 5 Apr 87 p 1

## [Text]

The Department of Telecommunications is working out a plan which will take care of the telecommunication needs of industrial estates and townships being set up in the suburbs of major cities and towns, Mr. Arjun Singh, Union Minister for Communications, said at a press conference here today.

He said some State Governments had expressed concern about the telecommunication service at these industrial growth centres. In response to this, he said, he had started a dialogue with the Chief Ministers on the steps to be taken, and expressed the hope that these would be completed by December 1988.

Asked whether any progress had been made towards developing a special business telecommunications network, he said the proposal had not been taken up yet.

The Minister, who was holding his first press conference in Madras after taking charge of this portfolio, was asked about the Government's stand on the Postal Bill. He parried the question saying that it was a subject under correspondence between the President's office and the Ministry of Communications.

Asked to comment on a charge by a former member of the P & T Board that mail was being opened by intelligence agencies even now without proper authorisation, Mr. Arjun Singh said nothing that was "beyond the pale of law" was being done.

**Target exceeded:** Speaking on the performance of the Telecommunications Department, he noted that the target for opening new telephone lines was exceeded in 1986-87. The department had installed 3.15 lakh new telephone lines against the target of 2.2 lakh lines. Quality circles were established in all telephone districts giving the staff an opportunity to improve by internal suggestion. The fault rate had come down.

Mr. D. K. Sangal, Secretary, Department of Telecommunications, who was present at the press conference, pointed out that while the demand for telephones was growing at an annual rate of 10-11 per cent, new telephone connections were being made available at a rate of 7-8 per cent a year. The backlog, therefore, had swelled from 3.5 lakhs at the beginning of the Sixth Plan to 11.4 lakhs today.

**Plan to clear backlog:** The department, he said, was drawing up plans to increase telephone connections by 15 per cent each year to wipe out the backlog. A 10 per cent growth rate was achieved in 1986-87, but Mr. Sangal conceded that the department might not be able to sustain even this rate with the resources available.

Mr. Arjun Singh agreed with a reporter that the installation of some electronic exchanges had been delayed. He said the ITI's factory at Mankapur, which makes digital electronic exchanges, was due to supply 28,000 lines in 1986-87, but was able to furnish only 8,000 lines. The remaining equipment "were damaged in transit" he said. These would be delivered in the next six months.

Mr. M. S. Rangaswami, Postmaster-General, Tamil Nadu Circle, who was asked by the Minister to reply to a question on the Speed Post service, said that there was not a single failure in the delivery of speed post articles in Madras. About 400 letters were being booked by speed post in Madras daily, he said.

Asked whether the Government would respond to representations from the press and reduce the hike in teleprinter and facsimile rates, Mr. Arjun Singh said, "We'll see what is possible." However, he said the resources of the department had to be taken care of, and that it could not be allowed to run at a loss.

/13104

CSO: 5550/0121

## PARLIAMENT DISCUSSES RADIO, TELEVISION PROGRAMMING

New Delhi PATRIOT in English 20 Mar 87 p 5

[Text] The Government on Thursday described as unfounded the allegations that All India Radio and Doordarshan discriminated against the leaders of Left Front and its State Ministers in terms of coverage, reports PTL.

Information and Broadcasting Minister Ajit Panja told Mrs Kanak Mukherjee in a written reply in the Rajya Sabha that as news organisations, both AIR and Doordarshan adhered to the policy guidelines prepared by the advisory committee on official media and present news/programmes in an objective, balanced and factual manner.

Allegations made by MPs against AIR/TV regarding distortion in coverage are looked into carefully and they were found to be without basis, he said.

In another answer, Mr Panja said that both All India Radio and Doordarshan did not compile and store information regarding time and words given for the coverage of either the Prime Minister or Central Ministers or opposition leaders.

A large number of news bulletins are put out daily by the two media and it is not possible to count word by word all the bulletins broadcast/telecast in a single day.

**Commercial code:** The Government is revising code of commercial publicity in the Doordarshan, Minister of State for Defence Arun Singh told the House.

Deputising for Minister of State for Information and Broadcasting Ajit Kumar Panja, Mr Arun Singh told Mr Rajni Ranjan Sahu (Congress) during question hour that the Government would soon place before Parliament the revised code.

It would take care of excessive commercial consumerism and women being depicted in an adverse way in ad-

vertisements, he said answering supplementaries.

To a supplementary by Mr P N Sukul (Congress) whether the Government would ensure that during the showing of any important programme like the cricket, the Doordarshan would not interrupt it with some advertisement, the Minister said he had noted the suggestion.

Mr Arun Singh said in a separate reply that 80 per cent of the country's population would be covered by the Doordarshan by the end of the current Plan in 1990.

Answering a supplementary, Mr Singh said one-fourth of the total expenditure in the seventh Plan on Doordarshan is coming out of the revenues earned by the Doordarshan. However, these revenues could not be allowed to become the sole property of the Doordarshan, the Minister added.

Mr Singh said that four new TV transmitters of 100 W power are expected to be commissioned in Maharashtra during 1987-88. They will be located at Gadchiroli, Buldana, Yavatmal and Beed, he added.

**Andhi Galiyan:** The Government denied that the regular programme "Andhi Galiyan" shown on Doordarshan on Sunday evening spoke more of the exciting features due to the effect of drugs taken by some misguided youth.

Mr Panja told the House in another reply that the programme had been cleared for telecast at the appropriate level as was the case with the programmes produced by Doordarshan.

The Minister said that the proposals received for sponsored serials were not classified State-wise but on the basis of their concept and production values.

In a written reply to another question, Mr Panja said that the reported statement of Mrs Anita Bose Pfaff, daughter of Netaji Subhas Chandra Bose, expressing bitter feelings against Doordarshan for coverage was not entirely based on facts.

The minister said Mrs Pfaff's visit to Calcutta in February this year was covered by the Doordarshan Kendra, Calcutta which was also carried in the national news bulletin put out from Delhi.

However the function attended by her at Rashtrapathi Bhavan could not be covered, he said.

In another reply Mr Panja said that the Doordarshan at present devotes five per cent of its total transmission time to the telecast of commercial advertisements.

/13104

CSO: 5550/0116

## CENTER TELECOM POLICY CONTRADICTED IN KARNATAKA

Madras THE HINDU in English 23 Mar 87 p 16

[Text]

A quick study of the impact of the C-DOT's rural automatic exchange (RAX), installed at Kittur in Karnataka, has brought out how the State Government and the Centre are working at cross purposes.

The Central Government has gone in for electronic RAX with a view to providing fast means of communication to villages but the State agencies are working contrary to this by barring the STD facilities in State Government institutions having telephone connection with the RAX. Even the public call offices under the RAX are STD-barred.

**Anomalous situation:** The study team considers it anomalous that the Government of India should extend RAX to villages and then the State Government barring their functionaries in the villages from STD facilities. It has noted that the 'outdated' system of allocating STD communication based on rank and not on need has led to this anomalous situation.

The study, carried by a three-member team of the National Institute of Banking Management, has revealed that the RAX has increased the economic return of the business community, besides helping the people to get quicker medical services, and a host of social benefits. The team has supported the plea for extending the STD facilities in the public call offices to be of help to the people in times of emergency.

The RAX was installed in July last year to replace the Strowger electro-mechanical exchange and the study on the socio-economic impact of the RAX was made in December 1986. The exchange has 74 lines, of which 56 have STD facilities. Of the remaining 18, eight are public call offices, one is in a petrol outlet, five in Government offices like Sub Treasury, Taluka Panchayat Committee, State Electricity Board, police station and Syndicate Bank. All these have no STD facilities and the study team feels that the Government agencies can perform their duties better if they have STD facilities.

**Considerable gains:** The users' reaction has been positive. The traders reported that they had gained considerably from the installation of the RAX.

/13104

CSO: 5550/0117

## FIRST OPTICAL FIBER LINK FOR RAILROADS PLANNED

Bombay THE TIMES OF INDIA in English 27 Mar 87 p 23

[Text]

**A**SOPHISTICATED and modern communication system based on the optical fibre technology will be installed between Churchgate and Virar stations on the Western Railway.

The Western Railway has signed a contract with the British firm, STC Telecommunications, for designing and commissioning the equipment. The system, when commissioned by February 1989, will be the first optical fibre-based railway communications network in India.

In this technology, hair-thin glass fibres are used to propagate electrical signals in the form of light signals. The electrical pulses are converted into optical pulses, using lasers and at the receiving end, the optical signals will be converted into electrical signals. Voice, data and signal information can be transmitted through this fibre which is not affected by any electrical or environmental interference.

**FAIL-SAFE OPERATIONS**

A strand of fibre is capable of transmitting 2,000 telephone calls per second. The Western Railway system will have a band of 10 fibres to meet maintenance and expansion requirements in future.

The new system will replace the existing microwave communication system which is subject to the vagaries of monsoon and other problems resulting in breakdown of communication. Optical fibres, on the other hand, offer reliable and fail-safe operations. The

Western Railway system will be equipped to transmit as much as 480 calls per second in a strand of fibre which is six times more than its present need.

While the total project cost is Rs. 11 crores, the contract for STC is worth 1.5 million pounds (Rs. 3 crores). The Western Railway will lay 60 km-long optical fibre cable along the tracks, acquire expertise for joining, installation, testing and commissioning of the system with its own engineers and technicians, according to Mr. Ranjit Mathur, general manager, Western Railway, who signed the contract.

**C. RLY. PLANS**

Indian Railways will gradually introduce the systems in all its zonal railways. The Central Railway is expected to float a tender shortly for a similar project.

The Western Railway system will be initially used for control communication, deputy control communication, point-to-point communication, inter-exchange junction lines and central public address system. There is also a likelihood of outside agencies using the spare communication channels.

Mr. Eric Foster, commercial director of STC said the second optical fibre project in India has been bagged by his firm following the installation of the first 160 km-long pipeline optical communication system between Bombay and Pune for the Hindustan Petroleum Corporation by STC.

The company is also bidding for transfer of technology in the production of optical fibres by Hindustan Cable Corporation and the Indian Telephone Industries.

/13104

CSO: 5550/0118



## TELEPHONE PLANS TOLD, RURAL AUTOMATIC EXCHANGE DEVELOPED

New Delhi PATRIOT in English 1 Apr 87 p 5

[Text] **Baroda, March 31 (UNI)** — The pilot 128-line rural automatic exchange (RAX) developed by the Centre for Development of Telematics (C-Dot) and tested at Kittur in Karnataka has been approved by the Department of Telecommunications.

This was disclosed here by C-Dot adviser Sam Pitroda, who said efforts would now be made to set up pilot production facilities to produce about a lakh of RAX lines.

Similarly, C-Dot had given licences to about 48 firms for manufacturing the 128-line private automatic branch exchange (PABX) developed by it.

About 10 of these firms, mostly in the small scale sector had already started production in small volumes, Mr Pitroda said.

The RAX is working satisfactorily on Kuttur Northern Karnataka for about nine months now with about 80 lines already installed.

People in the village, which has a population about 8,000, are now making more calls at less costs and the system is already overloaded, Mr Pitroda said.

C-Dot hopes to deliver the first module of its 5W two-line exchange in the second quarter of this year. The first module will be tested in the Delhi Cantonment area, he said.

By the end of this year, the organisation also hopes to conduct field trials of the first 4000-line module of its 16,000-line exchange in Alsur near Bangalore, he said.

According to Mr Pitroda, the exchanges designed by C-Dot were now not only cheaper and more compact than imported ones, but were also made specially for Indian high traffic conditions.

The Kuttur RAX was the first digital system in the world that functioned

without airconditioning facilities, he pointed out.

Except the integrated circuits, all the parts were indigenous and the exchanges used less power as compared to the foreign models, he said.

C-Dot has already submitted a second phase three-year plan to its governing council and approval was expected shortly, he said.

According to Mr Pitroda, the second phase would concentrate on enhancing product features and addition of capabilities.

There are also plans to develop indigenous trunk automatic exchange and a larger PABX with 2,000 lines.

Efforts will also be made to introduce an integrated service digital network (ISDN), in the country as well as to develop network management centres around the country, he said.

Over the next two years, Mr Pitroda expects the present analog system in the country to be replaced by a predominantly digital network.

Mr Pitroda said the main aim of C-Dot was to provide 'proper connectivity' to the one billion people who will inhabit this country by the turn of this century.

He said the plans are to provide about 30 million telephones in the country by then against the present figure of about three million.

Apart from better communication facilities, this will give a boost to local economies, creating large number of jobs in ancillary industries, he pointed out.

The ultimate objective would, of course, be to install exchanges in all the villages of the country, and as a first step, efforts will be made to create one fully connected district in the country, he said.

## BRIEFS

HI-TECH TELEPHONE MANUFACTURE--Rajasthan Telephone Industries Limited, a joint venture with Rajasthan State Industrial Development and Investment Corporation (RIICO) has set up a plant to manufacture hi-tech push button telephone instruments in technical collaboration with world leader Ericsson Information Systems, Sweden. Slated for commercial production in the fourth week of April, the plant will have in house capacity to manufacture all the critical components via push button assembly, hook switch assembly, microphone and receiver capsules, etc. The plant will have the latest computerized test equipment for 100 per cent electronic testing of all components and the populated printed circuit board and will be centrally airconditioned to ensure regulated humidity, temperature and dust free environment for assembly and testing. The plant, situated 70 kms from Delhi, in the industrial complex of Bhiwani, in Alwar district, is just off the Delhi-Jaipur national highway. Apart from the geographical advantage of being close to the consumption points, the company will enjoy Central sales tax exemption for five years. This ensures a competitive pricing advantage of 4 to 10 per cent. The company has developed an aggressive marketing strategy to tap all the segments of the market and has signed distribution agreements to cater to trade sales throughout the country. It has an established all-India network of regional offices and the institutional segment is very well covered. Several memorandums of undertaking have been signed with OEMs like Escorts, Uptron, Hindustan Brown Boveri, etc. to ensure a captive market for instrument. Apart from confirmed orders from MTNL, substantial orders are expected by endmonth. [Text] [New Delhi PATRIOT in English 31 Mar 87 p 11] /13104

INDIGENOUS DIGITAL EXCHANGE--The Union telecommunications secretary, Mr. D.K. Sangal, said here today that the latest French switching technology being adopted by the country in a big way should vastly improve the telephones' customer services. Inaugurating the country's first indigenously-manufactured computer-controlled (digital) telephone exchange at Naranpura, Mr. Sangal admitted that the department's working had been unsatisfactory owing to inadequate resources, inferior products, limited production capacity and the infamous Indian work culture. He called upon the 350,000 department employees to take the lead in the country to provide the customer service the people were entitled to. He reminded them that 75 per cent of the staff salaries was paid from the income from the customers. Mr. Sangal said the department had set a target of achieving 90 per cent call-success rate for local calls, 60 per cent on STD calls and reducing the fault rate. He regretted that due to

financial limitations the department could add only 1.1 million connections in the seventh five-year plan to raise the total to four million connections, leaving two million on the waiting list. He wished the deficit would be wiped out, with priority being given to telecommunications. Mr. Sangal congratulated the Ahmedabad Telephones staff for the successful completion of the project despite several constraints. The 8,000-line Naranpura exchange is one of the first three units, the equipment for which rolled out of the ITI in UP which was set up with CIT-Alcatel's collaboration. [Text] [Bombay THE TIMES OF INDIA in English 30 Mar 87 p 7] /13104

INTERNATIONAL PHONE LINKS--International Subscriber Dialed telephone service has now been introduced to Zambia, Zimbabwe, Kenya and Botswana. The Minister for Communications, Mr Arjun Singh, today made an inaugural call to Zimbabwe and spoke to Dr Nathan Shamuvaira, Minister for Information, Posts and Telecommunications of the Republic of Zimbabwe. Earlier, the Minister of State for Communications, Mr Santosh Mohen Dev, inaugurated the ISD service to Zambia. He spoke to Mr Fitzpatrick Ghuula, Minister for Power, Transport and Communications of Zambia. The country codes for ISD service to Zambia is 260, Zimbabwe 263, Kenya 254 and Botswana 267. Subscribers should dial 00 followed by the country code, area code and the subscriber number to establish a call to the respective countries. With the latest extension of ISD lines, the total number of countries accessible through direct dialling by Indian Telephone subscribers total 19. The other countries include Austria, Australia, Belgium, Federal Republic of Germany, France, Hongkong, Italy, Japan, Malaysia, Netherlands, Singapore, Turkey, the U.K., the USA and the Soviet Union. [Text] [Calcutta THE STATESMAN in English 26 Mar 87 p 9] /13104

CALCUTTA PHONE PLANS--The department of telecommunications has planned to add 45,000 lines of exchange capacity for Calcutta Telephones during the Seventh Plan period. Of this, 10,300 lines have already been added. In addition to this 91,800 lines of old and worn out exchanges will be replaced, nearly 30,000 such lines have already been replaced so far, says an official release.

To protect the cable, 100 km of ducts would be constructed by 1990, out of which 56 km have so far been completed. A majority of the junction cables will be replaced by radio relay and optical fibre systems. Nine radio links have been installed. During the Seventh Plan period, 60 more radio links will be installed and 37 optical fibre cable systems have been planned. Pulse Code Modem systems are proposed to be installed on various junction cables. Altogether 338 systems have so far been commissioned. Another 7,000 systems have been planned. Electronic Trunk Automatic Exchanges (TAX) have been planned for Calcutta city. A 4000-line digital electronic exchange has been planned to replace the 4,000 lines Penta TAX. Another 8,000 lines digital TAX is planned during the Seventh Plan period. A 3,000-line digital electronic telex was installed in 1983. Expansion of 4,6000 telex lines has been planned out of which 2,500 lines will be used to replace the existing Strowger Telex. There are more than 36,000 names on the waiting list for telephones in Calcutta. [Text] [Calcutta THE TELEGRAPH in English 2 Apr 87 p 1] /13104

CSO: 5550/012

# PAKISTAN-UAE CABLE LINK COMMISSIONED

Lahore THE PAKISTAN TIMES in English 12 Apr 87 p 7

[Text]

KARACHI, April 11: A 1,200-channel submarine telecommunication cable link between the United Arab Emirates (UAE) and Pakistan was formally commissioned here this morning by the Federal Minister for Communications and Railways, Mr. Mohammad Aslam Khan Khattak.

The UAE Communications Minister simultaneously performed the formal commissioning ceremony at the UAE end of the submarine cable link, which is located in the state of Fujairah, one of seven component States forming the United Arab Emirates.

The project, which was undertaken jointly by the UAE and Pakistan after an agreement signed in March, 1983, involves the laying of a 1177-kilometre long submarine cable from Hawkes Bay near Karachi to point near the Hilton Hotel in Fujairah.

The foreign exchange cost of the project comes to 45 million dollars and is being divided equally between the two countries while the local costs are to be borne by each State separately while in the case of Pakistan came to Rs. 42 million.

The submarine cable link has a design capacity of 1,200 circuits, but initially only 62 have been opened on a trial basis.

The submarine cable will,

however, handle an increasing amount of the telephone traffic between Pakistan, the UAE and other Gulf countries (including Iran), thus largely taking over the role currently played by Intelast, the international Consortium which provides a satellite telecommunications link.

The minimum design life of the submarine cable is 25 years, though this can stretch out to an optimum of 40-odd years.

In his brief inaugural address at the commissioning of the new submarine cable link at the T&T Marston Road Complex here this morning, Federal Communications Minister M. Aslam Khan Khattak said it was another demonstration of the close cooperation between the UAE and Pakistan.

He later spoke with the Ruler of Fujairah State via the new link.

The UAE Consul-General in Karachi, Mr. Yusuf Abdul Khaliq, and the Director-General, T&T Department, Mr. S.A. Siddiqi also spoke on the occasion.

They congratulated all those involved in the project.

Representatives of the Japanese contractors and senior T&T officials were present at the submarine cable link commissioning ceremony. —APP.

/9317

CSO: 5500/4714

## PAKISTAN

### BRIEFS

PAKISTAN-KUWAIT MEDIA AGREEMENT--Kuwait, April 13--An agreement on media co-operation between Kuwait's Information Ministry and Pakistan Broadcasting Corporation was signed here today. The agreement stipulated that the two parties exchange radio programmes featuring social, cultural and economic life as well as expertise and viewpoints concerning problems facing mass media communication in the two countries.--QNA [Text] [Lahore THE PAKISTAN TIMES in English 14 Apr 87 p 2] /9317

SATELLITE RECEIVING EARTH STATIONS--Islamabad, 20 Apr (AFP)--Two satellite-tracking ground stations were commissioned Sunday by the Space and Upper Atmosphere Research Commission (SUPARCO), THE ASSOCIATED PRESS OF PAKISTAN reported. SUPARCO sources told AFP both stations were functioning properly, and were receiving data from a number of satellites. The data flow to the two stations, at Lahore and Karachi, will cover areas ranging from astronomy to earth resources. [Text] [Hong Kong AFP in English 0243 GMT 20 Apr 87] /9604

CSO: 5500/4713

VOA PROPAGANDA CAMPAIGN, PSYCHOLOGICAL WARFARE HIT

Moscow SOVETSKAYA ROSSIYA in Russian 22 Mar 87 p 3

[Article by V. Matyash, TASS correspondent for SOVETSKAYA ROSSIYA]

[Text] Hardly more than 45 years ago the Voice of America--the mouthpiece of the ruling clique in the United States--sounded over the air waves for the first time. From its first days, the radio station's operations have received and still receive an enormous amount of attention and generous allocations.

At present the yearly budget for the Voice of America is almost \$185 million (a total of about \$5 million are expended per year for the activities of its colossal propaganda complex outside the United States), more than 3,000 persons are employed at the radio station, and it has its own correspondents in 129 countries. Schooled anti-Soviets as well as staff associates from the CIA and other American intelligence services collaborate with the Voice of America. The radio station has 108 transmitters in the territory of the United States and abroad. They broadcast 1,327 hours each week in 43 languages, including Russian and the languages of the people of the USSR.

The NEW YORK TIMES wrote that, because it is considered a government institution, the associates working at the Voice of America have recently received instructions from the White House and State Department, which were sustained in the spirit of the times of the cold war. In particular, they were instructed to regard the people of the countries in the socialist alliance as "enslaved Nazis."

Expanding the scale of the "psychological war" against the Soviet Union and other socialist countries and against developing governments, the USIA decided, in accordance with the recommendation of the U.S. National Security Council, to set aside 1.5 billion dollars for technical updating of the Voice of America alone. New, high-power retranslation centers are being constructed for transmissions to the USSR.

The Voice of America is implementing openly provocative actions that contradict elementary norms of international law. Here is one example. At night from the 14th to the 15th of April of last year, the radio station's Arab service transmitted an incitive address to the Libyan people over the air waves 15 times. The address asked the people to overthrow the leader of the

Libyan revolution Mu'ammār al-Qadhafi. The same night the American Air Force poured a hailstorm of bombs and rockets on Tripoli and Benghazi.

The expansion of the propaganda activity of the Voice of America, above all against the USSR and other socialist countries, shows that the U.S. administration has made "psychological warfare" one of the cores of its foreign policy.

CSO 5500/1029

12794

# U.S. RADIOS HIT FOR DISINFORMATION, SLANDER

Moscow SOVETSKIY VOIN in Russian No 4, Feb 87 p 47

[Article by Lieutenant-Colonel V. Nikanorov]

[Text] The imperialists who have been involved in a fierce psychological war against socialism for several decades now consider radio their most effective means. Even in Goebels' regrettably well-known propaganda department, it was at the time asserted that "radio is the most powerful implement that can be used to subordinate the people." A. Brzezinski, the not-unknown American anticommunist, has recently expresses a similar thought. "Radio," he has asserted, "represents a 'third generation' of means for achieving world supremacy." And indeed it is about such supremacy that the extreme right-wing imperialist circles in the United States dream. The workings of the gigantic U.S. propaganda machine are now directed toward achieving this goal.

It is characteristic that the United States has made disinformation and slander the main implements of its foreign policy. Each week ever-newer facts providing convincing proof of this are surfacing. To justify its military invasion of tiny Grenada, the United States concocted a fable about the "threat" to the life of American citizens located on the island. Trying to provide a basis for a new bombing attack on Libya, the American administration flooded the press and air waves with false messages about how this country was preparing acts of terrorism. The same malicious campaign has been raised against Siberia. A clear example of similar actions by the United States is the affair that has been called Irangate and has caused an unprecedented scandal both in America itself and beyond its borders. As this affair has unfolded, irrefutable proof has emerged that there have been secret weapons deliveries and that, under the guise of peace-loving phraseology, the United States has for more than a year fueled the fires of the bloody, senseless conflict between Iran and Iraq. The object of this deception has been the population of the United States itself as well as all of international society. Improbable efforts have been exerted on written lies to distort the results of Reykjavik that presented the peoples of the planet with the possibility of freedom from the threat of a nuclear catastrophe. Tubs of lies and slander on this matter have been splashed on the pages of the bourgeois press, and the air waves have been filled with base, propagandistic fabrications.

The U.S. Information Agency [USIA] undoubtedly plays a leading role in conducting these subversive propaganda actions. In the words of its director



C. Weeks, this department is playing a "strategic role" and is "America's leading edge in the war of ideas." It is no accident that expenditures for this official organ of American propaganda and its multiple services has grown so swiftly. This year they should surpass 950 million dollars. No small part of these resources will go to expand the subversive activity of the radio station Voice of America. Its yearly budget is close to \$187 million.

The Voice of America broadcasts in 39 languages of the peoples of the world. The volume of this station's transmissions is approximately 900 hours per week, with about 300 hours to the USSR. Their external objectivity and impassivity in setting forth the facts are only a cover for the station's anti-Soviet, anticommunist line. Broadcasting in the Soviet Union and other socialist countries, the Voice of America tries to discredit the social and state order of the sister nations, encourage nationalistic prejudices and vestiges, and create an unhealthy interest in various negative phenomena.

The air waves and subversive radio stations Radio Freedom [RF] and Radio Free Europe [RFE] are filled with a frantic antisocialist concoction by the CIA. Created in the full swing of the cold war, these diversional radio stations are expanding their subversive activity with each new year. These poisoners of the air waves have never been wanting for resources in Washington. And after the Reagan administration came to power, Radio Freedom and Radio Free Europe were literally befallen by a rain of dollars. If the two stations' 1981 budget was \$81 million, then today it has grown to \$168 million. A wide-scale program to update both stations has been developed. It has been proposed that the capacity of the shortwave transmitters located in Portugal, Spain, and the Federal Republic of Germany be updated and increased and that new transmitters be located in Israel and the Far East.

The volume of the weekly broadcasts of both stations in 22 languages exceeds 1,000 hours. And each of these is filled with an ill-intentioned lie directed against the socialist states. Last year, when speculating about the Chernobyl accident, Radio Free Europe tried to raise anti-Soviet sentiments in the European socialist states and to subvert the population's trust in the governments of these nations.

In recent times, new people who are closely connected with the Pentagon have risen to the head of the apparatus for psychological warfare against the socialist countries. The Council on International Radio Broadcasting to which RF and RFE are formally subordinate, are headed by M. Forbes, who is close to President Reagan. The former director of the Voice of America, J. Pell, who worked in the Pentagon a few years ago, has become the chairman of RF/RFE. And N. Vaslev, a former teacher at the U.S. Air Force Academy, assumed the post of director of Radio Freedom. These personnel changes may unfortunately explain Washington's attempt to switch all of the units in its ideological apparatus to the propaganda support of forced military preparations and to justify the White House's military force policies. The subversive radio stations are playing the role of the mouthpiece of military industrial corporations interested in fanning an unseen military psychosis.

And the Pentagon is organizing its own propaganda machine. The U.S. military bureaucracy finances more than 1,000 newspapers, approximately 400 journals,

and various bulletins with a total circulation of more than 12 million copies. The Ministry of the Navy alone maintains contacts with 600 television studios and 5,000 radio stations. In the past two decades Pentagon allocations for propaganda increased 15-fold. Each year the U.S. military bureaucracy spends about \$5 billion for these purposes.

These enormous resources have been applied to accomplish a very specific task--to sow mistrust and to enkindle hatred for everything connected with the life and ideals of socialist society. For this purpose, the successes of regional socialism are hushed up, and USSR domestic and foreign policy is misconstrued. Included among the main theses of the militaristic propaganda of the West is the notorious "Soviet military threat." This is not the first decade throughout which those who put their hopes in military force to address issues of world policy have waved this decrepit scarecrow in the West.

However, no matter how the ideological saboteurs try, no matter what efforts they make to keep people in a fog by creating a radio narcotic, the wheel of history will not let them turn the people back.

COPYRIGHT: "Sovetskiy voin," 1987

CSO 5500/1032  
12794

'FREE-WORLD LIFE' DEPICTED BY 'RADIO VOICES' HIT

Tashkent PRAVDA VOSTOKA in Russian 15 Dec 87 p 3

[Article by A. Kudinov, candidate of philosophical sciences and docent]

[Text] Thus it is the custom that, upon entering a new year, each person dreams of happiness and makes plans for the future. At such a time one wants to believe in success and hope for the best. And bourgeois ideologists and propagandists cynically use this. Their "radio voices" fill the air waves with every possible fantasy and gab and with stories about miracles and rhetoric about a "free world." All the ardor of the energy of mass information in the West has been directed to push the "new economic system," which has apparently arisen in the West and will "advance beyond the framework of capitalism."

What kind of system it is and how it has come to be called the "knight of the microphone and pen" is beyond our imagination. Watch out! There has already been the myth of "people's capitalism." Like ball lightning it has exploded into the life of the "great society."

The myth may be judged by such pearls as "In the West, the output from those enterprises whose shares partly or completely belong to the workers is high" and "Employers and workers are not antagonists but colleagues." Employees and workers at capitalist enterprises in the United States have been entrusted with Christmas cards on which employers have modestly written "colleague." Again capitalism is garbed in a masquerade costume, supposing that it has been successful in putting on a facade of a bourgeois system over its essence and disguising its prison as a fairy tale New Year's castle by decorating its walls with pastoral decorations.

A new legend has been called upon to replace the old ones. But this time it has a sharply expressed social coloring--"capitalism will be paradise." And the true story is a completely different, rigid system that, like imperialism itself, does not care for the victims necessary for it to reach its goals and is not quenched by any means but instead proceeds to the very bounds of bitterness. The rhetoric is smashed to smithereens when compared with real facts. Ninety-seven percent of workers and 99.7 percent of farmers in the United States could take an oath that they don't own one share of stock. And even the petty bourgeois and highly paid employees who own small stock

portfolios and who are seldom classed as "workers" have virtually no influence on the fate of enterprises. These stock shares are so dispersed that, for example, the most "public" corporation ITT controls a total of 30 proprietors having 7.5 shares.

And beyond what framework has capitalism "advanced" those workers who have turned outside the enterprise gates on New Year's Eve?! In the United States today there are more than 8 million unemployed, 33 million constantly hungry, and 3 million homeless persons. Meanwhile the bourgeois rhetoricians sing the same songs praising the "new system." In New York approximately 60,000 persons spend the night under the open sky, in Boston the figure is about 15,000, and in Washington, 10,000. "The problem of the homeless in the United States has taken on the scale of a national tragedy," announced E. Clark, coordinator of the union of homeless people in Boston. "To stop its catastrophic spread we need, above all, to stop the arms race, which is devouring hundreds of millions of dollars." It is impossible to disagree with this. The Congress approved a national military budget for 1987 on the order of 291.9 billion dollars.

The new year in the "free world" will not bring any changes in the relation between the exploiters and exploited; those who were rich will remain so, and those who were poor will remain poor as before. No rhetoric reigns over the statistics recently promulgated in the United States Census Bureau: only 4.6 percent of the nation's total monetary income goes to 20 percent of the poorest American families, whereas 20 percent of the richest families have 43.3 percent of the total income. This is the highest index since 1947.

This exploitative society doesn't promise anything to working women. Such simple concepts as the right to work and obtain an education remain empty words to millions of female citizens of the "free world." The difference in the wages paid to male and female workers gives American enterprises an annual profit of \$320 billion.

The situation of workers in other capitalist countries is similar. At many enterprises in France there is a wave of New Year's dismissals. Above all the country is hitting workers in the automobile, textile, ship building, steel casting, and ore recovery industries. Entire regions are paralyzed by unemployment. It has hit more than 2.6 million persons. "Superfluous people" in England number over 3 million; in Japan the figure is 1.8 million; in the Federal Republic of Germany, 2.5 million; and in Italy 3 million.

Facts show that the working class and all those who work in capitalist countries were believing the propagandistic rhetoric increasing less right before the new year and after it. They are attending demonstrations with increasing frequency, not only with economic but also with political demands, and are unfolding a fight against the "new system" of oppression and plundering and a fight for peace, democracy, and social progress, while justly considering that real rather than illusory happiness may only be found in battle.

CSO 5500/1030  
12794

U.S.-USSR INFORMATION TECHNOLOGY EXHIBIT EXCHANGE

PM081045 Moscow IZVESTIYA in Russian 6 Apr 87 Morning Edition p 4

[Report by V. Shmyganovskiy: "USSR-United States: Exhibitions Are Going to Visit"]

[Text] A decision has been taken on the exchange of thematic exhibitions between the Soviet Union and the United States. The U.S. exhibition "Information Technology in U.S. Life" will be the first and will be held in nine cities in our country.

This was determined as a result of talks between the USSR Chamber of Commerce and Industry and the U.S. Embassy in the USSR. The chamber will render assistance to the USIA in organizing the exhibition, which will cover an area of 1,250 square meters.

"The exchange of traveling exhibitions will take place in accordance with the general agreement between the two countries' governments signed in November 1985 in Geneva," V. Pletnev, first deputy chairman of the USSR Chamber of Commerce and Industry Presidium, says. "Opening 5 June in the USSR Exhibition of National Economic Achievements 'Electrical Equipment' pavilion, the U.S. exhibition will visit Kiev, Rostov-na-Donu, Tbilisi... On 25 February 1988 it will make a final stop in Tashkent. The other 'intermediate' cities will be determined later. What will Soviet visitors see? Computers, robots, sophisticated telephone apparatuses, sound recording equipment, satellite communications apparatus, light guides, and printing equipment..."

In turn after a visit by a USSR Chamber of Commerce and Industry delegation, sites and terms have been determined for organizing a Soviet traveling exhibition entitled "The USSR: The Individual, the Family, and Society" in the United States. It will open in late August in New Orleans and will then visit Atlanta, Washington, Memphis, and other cities. The exhibition's subject matter speaks for itself. It is a description of how our people live, of their work, concerns, attachments, and traditions. It will reflect the processes which not perturb Soviet society -- restructuring, openness, and the democratization of our entire life. This is generating close attention in other countries, including the United States.

The Soviet and U.S. "travelers" are resuming their shows after quite a long break. There is no doubt that these contacts will be useful to both sides and to our peoples.

/9738

CSO: 5500/1038

## BRIEFS

BROADCAST AGREEMENT WITH SWITZERLAND--Moscow, 13 April (TASS)--An agreement between the USSR State Committee for Television and Radio Broadcasting and the Swiss Television and Radio on cooperation in the sphere of television and radio broadcasting was signed in Moscow today. The agreement envisages exchange of television and radio broadcasting programmes about the life of the peoples of the two countries, preparation of programmes on the most important events in the USSR and Switzerland, mutual assistance to television and radio reporters and shooting teams, participation in international television festivals held by the sides. The document was signed by Chairman of the USSR State Committee for Television and Radio Broadcasting Aleksandr Aksenov and Director General of the Swiss Television and Radio Leo Schuermann. Switzerland's ambassador to the USSR Karl Fritschi was present at the ceremony of the signing. [Text] [Moscow TASS in English 2023 GMT 13 Apr 87 LD] /12858

CSO: 5500/1037

EUROPEAN AFFAIRS

EC ADOPTS MEASURES FOR INFORMATION TECHNOLOGY STANDARDS

Bonn TECHNOLOGIE NACHRICHTEN-MANAGEMENT INFORMATIONEN in German No 449, 11 Feb 87 pp 10-11

[Resolution of the EC Council under the title: "Standardization in the Area of Information Technology"; first paragraph is TECHNOLOGIE NACHRICHTEN introduction]

[Text] The EC Council has decided on a series of measures to promote standardization in Europe, and to develop and implement standards for information technology and functional specifications for telecommunications.

Measures for the Development of Standards in the Area of Information Technology and Telecommunications

1. Goals

- a) Contribute to the creation of an internal EC market in information technology and telecommunications.
- b) Improve the international competitiveness of EC manufacturers through a higher market potential within the EC for equipment manufactured with accepted European and international standards.
- c) Facilitate information exchanges within the EC by reducing obstacles created by incompatibilities resulting from absent or imprecise standards.
- d) Meet user's needs by providing more freedom for the composition of their systems assuring compatibility and therefore better performance at lower costs.
- e) Promote the application of standards and functional specifications in government contracts.

## 2. Description of Measures and Operations

### 2.1 Establishing programs and priorities

Both the EEC requirements and the commercial consequences of these activities from the viewpoints of users, manufacturers, and telecommunications authorities are to be taken into account in the establishment of activity programs and priorities. The work to be done at this level includes, in particular:

2.1.1 Collection of detailed information based on national and international programs, its presentation in a form which allows comparative analysis, and drafting of the summary documents necessary for the work of the commission;

2.1.2 Dissemination of this information, examination of the demand, and consultation with the interested parties;

2.1.3 Timely coordination of activity programs with international standardization activities;

2.1.4 Administrative processing of activity programs;

2.1.5 Compilation of reports on the implementation of activities and on practical application results.

### 2.2 Implementation of standardization activities in the area of information technology

The implementation of standardization programs requires the development of a number of procedures which are normally delegated to the CEN/CENELEC [European Committee for Standardization/European Electrical Standards Coordinating Committee] and the CEPT [European Conference of Postal and Telecommunications Administrations]. They correspond to the various steps which are necessary to ensure the validity of standards.

This includes:

2.2.1 Refinement of international standards to avoid ambiguities and multiple solutions which contradict the function of a standard which is supposed to assure the exchange of information and the compatibility of systems;

2.2.2 Promulgation of preliminary standards when this is justified by extraordinary delays in the creation of international standards, or the promulgation of EC standards where international standards do not exist;

2.2.3 Stipulation of conditions which must be met as evidence of complete conformity with a standard;



2.2.4 Creation of test standards or test specifications as part of the standards, and the stipulation of methods and structures which enable test laboratories to check compliance with standards on a satisfactory and coordinated basis.

## 2.3 Activities in the area of telecommunications

Standardization work in the area of telecommunications is concerned with two activities:

--creation of functional specifications based on international or European standards/specifications, when they exist, for the access to public telecommunications networks which offer services that have been specially created for the exchange of information and data between information technology systems. These technical activities correspond to the coordinating actions taken in the telecommunications sector and are assigned to CEPT according to the procedures laid down in 86/361/EEC guidelines.

--Activities in areas common to both information technology and telecommunications which require stronger cooperation between the competent technical organizations (that is, CEN/CENELEC/CEPT). This work must be directed at the utilization of standards and functional specifications in as many applications as possible according to 83/189/EEC guidelines.

## 2.4 Supplementary Measures

This part of the program contains the following measures:

### 2.3.1 Specific activities in the area of measuring systems:

--promotion of the development of test and validation tools and of techniques for formal description:

--subsidy of reference applications, particularly where the creation of functional specifications requires the connection of several specifications.

### 2.4.2 Subsidy for the compilation of guidelines for the application of standards for the end-user.

2.4.3 Subsidy of organizations which demonstrate the degree of systems compatibility that can be achieved by standardization. The main purpose of this measure is to make testing and measuring tools available for the various projects as described in 2.4.1, and to ensure the testing of development standards.

2.4.4 Subsidy of agreements which go beyond the framework of industry standards, depend on agreements between various branches of a profession, and contribute to the efficiency of information exchange (transactions of travel agents, transfer of money, data processing of customs documents, computer aided manufacture, office automation, micro-computer applications, etc.).

2.4.5 The specific investigations and projects for standardization in the area of information technology.

3. Measures in Connection with the Application of Standards in Government Contracts

Identification of the most efficient methods for rapid utilization of the standards and technical specifications created within the framework of this resolution. A suitable connection with the activities within the framework of 77/62/EEC guidelines is required.

Details regarding this resolution are contained in the EEC Official Gazette, Issue L 36/197 and may be obtained free of charge from the editor of TECHNOLOGIE-NACHRICHTEN.

8617

CS0: 3698/M193

RESULTS OF SIEMENS, ESPRIT GaAs MMIC R&D FOR SATELLITES, RADAR

Coburg MIKROWELLEN & MILITARY ELECTRONICS MAGAZIN in German No 6 1986 pp 558-563

[Article by E. Pettenpaul of Siemens AG, Components Division, 8000 Munich: "Computer-Aided Design of Analog GaAs MMICs"]

[Excerpts] 1. Introduction

Analog GaAs circuits are becoming increasingly important for applications in directional radio, radar and satellite reception technology. With the direct satellite broadcast receiver planned for Europe beginning in 1987, a civilian system application of monolithic GaAs microwave integrated circuits (MMICs) will for the first time be visible in large number. The military counterparts, comparable in size and complexity, are active phased array radar systems.

This article describes the first phase of the development of a microwave element library within the context of the EEC's ESPRIT research program. The focal point of this undertaking initially is to describe the micron and submicron single-gate and dual-gate MESFETs and the passive concentrated elements up to 12 GHz (up to 18 GHz by the end of 1986). In addition, the first part will be rounded out by a study of various passive circuits (networks, filters, couplers) as well as the development of a user-friendly CAD microwave package based on table computers. Over the next 2 years, models of distributive amplifiers and non-linear mixer and oscillator circuits will be worked out.

Based on the TV SAT reception components of a frequency convertor, the procedure for the development of computer-aided circuitry in the frequency range of approximately 1-13 GHz will be explained.

5. TV SAT Convertor

The receiving set for satellite television consists of an outside unit--a parabolic antenna with a low-noise convertor attached to it--which transposes the received signal to the intermediate frequency range, as well as an inside unit located near the television set with a channel-selective modulation transducer. The schematic drawing of the convertor in Figure 4 shows the necessary components: the high frequency amplifier, the mixer, the local

oscillator, the intermediate amplifier and the image frequency and intermediate frequency filter.

The first generation of these convertors will definitely be built using discrete components of hybrid technology. It is also clear, however, that an advanced monolithic GaAs design holds out the promise of noticeable advantages for the user, by reducing assembly and tuning time. We will next discuss the circuitry design and developmental status of such monolithic ICs.

#### 6. Four-Wire Networks, Filters, Couplers

The most important applications for passive circuits are in networks for impedance matching, characteristic impedance transformation, filter circuits and cable couplers. In monolithic circuits, L-T or pi elements are used as simple, largely nondissipative reactance elements, an example being the matching of a real impedance to a complex one. Because of the capacitive character of the FETs in the GHz range, the reactance elements are generally inductive.

The filters needed for the satellite reception convertor--a band-pass filter for suppressing the image frequency and a low-pass filter in front of the intermediate frequency amplifier--can be constructed monolithically using microstrip elements, but also concentrated elements. The dominant factor here in terms of size and filter losses is the transformation ratio of the source to the load ( $< 3:1$ ) and the quality of the coils.

The use of monolithic Lange or Wilkinson couplers, which are best produced using  $\lambda/4$  microstrips, for applications in the X band is not advisable, due in part to the chip surface needed in most cases.

#### 7. Low-Noise Preamplifiers

Figure 6 shows the circuitry layout for a single-stage, monolithic amplifier for the satellite TV band (11.7-12.5 GHz) with a four-wire network. The goal of the circuitry layout is to find an optimally nondissipative reactance network, which on the one hand offers MESFET the source impedance for minimal noise and on the other hand makes it possible to achieve matching at the output with a voltage standing wave ratio [VSWR] of  $\leq 2$ , as well as a transformation to real 50-ohm source and load resistors.

The actual transformation elements are  $L_2$  and  $L_3$  in the input four-wire network and  $L_4$ ,  $L_5$  and  $C_3$  in the output four-wire network. The external elements  $L_{x2}$  and  $L_{x3}$  are not only for voltage lead-in, but can also serve as a component of the actual interface adaptor, if necessary. The technological application of the first Siemens amplifier prototype, achieved with concentrated reactance elements, is shown in Figure 2 [not included]. Similar amplifier designs were published by Hughes (9), NEC (10) and Toshiba (11), all of which used microstrip four-wire networks.

The medium-frequency results are rather consistent in showing a stage gain of approximately 9 dB, a noise factor of  $3 \pm 0.5$  dB (thus, approximately 1 dB worse than the noise factor for the FET) and the difficulty of achieving a VSWR

of  $< 2$  simultaneously at the input because of the high impedance transmission of approximately factor 3. The attractiveness of the design shown here lies in the fact that by using four-wire networks made of concentrated elements, the relative system surface needed is cut in half.

#### 8. Low-Noise Intermediate-Frequency Wideband Amplifiers

Negative feedback circuits are a simple, but very effective method of wideband transmission. For applications of up to approximately 4 GHz, and especially for the intermediate band used in TV SAT reception, a purely ohmic parallel negative feedback coupler in series with a metal-insulator-metal capacitor is adequate insofar as the MESFET exhibits sufficient mutual conductance and thus gate width (12, 5).

Figure 8 shows a monolithic design of this type of amplifier on a very small surface. This component, marketed as CGY 40, is a further development of the CGY 21/31 dual-stage wideband amplifier (1, 2), the first monolithic GaAs IC on the world market (1981). The innovations involve the use of the very advantageous self-adjusting DIOM technology (13), as well as galvanic gold airbridges for the low-capacitance interconnection of the sources (5).

Computer simulation and the measurement of forward transmission consistently show an amplification of 9 dB in mid-band, a 2 dB bandwidth of 2.2 GHz and a noise factor of 3.0 dB with a guaranteed VSWR of  $< 2:1$ . The critical advantage of this GaAs IC over silicon wideband amplifiers--besides its small noise factor--lies in the fact that good dynamic performance is ensured ( $P_{1dB} = 18$  dBm). Source (5) contains further details and a comparison of published characteristics.

#### 9. MESFET Mixer Circuits

Downward mixers with GaAs MESFETs have a significant advantage in the GHz range--at least into the X band--over conventional diode mixers in that they deliver a conversion gain instead of a conversion loss. In this way, for example, given a comparable mixer noise factor, the noise performance of a subsequent intermediate-frequency amplifier becomes less important, and low-noise preamplifiers do not necessarily have to have sensitive, multistage designs.

Furthermore, as the schematic drawing in Figure 9 [not included] shows, a simple lead-in of the signal is possible if dual-gate MESFETs are used as mixers, due to their intrinsic separation. Switching time can be reduced significantly, since input and output signals can be processed directly without having to use couplers. Besides a suitable low-pass filter, there is a particular need for an open  $\lambda/4$  microstrip, or a concentrated capacitance element against mass, in order to suppress the high-frequency and oscillator signal at the output.

The course of the function of GaAs MESFETs as a microwave mixer runs across the modulation of mutual conductance with the frequency of the sinusoidal oscillator signal. The procedure for calculating the four-wire networks and

drawing up the conversion matrix is provided in (14); the conversion is the subject of the ESPRIT R&D program.

Based on the measured results of the first hybrid components (15), as well as on our own lab samples, a wideband conversion gain of approximately 5 dB with a noise factor of approximately 8 dB will be possible from this type of mixer IC if the critical selection of the operating time and of the connections is optimized.

## 12. Bibliography

5. Pettenpaul, E., Langer, E., Huber, J., Mampe, H., Zimmermann, W., "Discrete GaAs Microwave Devices for Satellite TV Converter Front Ends," SIEMENS FORSCHUNGS- UND ENTWICKLUNGS-BERICHT, No 13, 1984, pp 163-170.
9. Liu, L.C., Maki, D.W., Feng, M., Siracusa, M., "Single and Dual Stage Monolithic Low Noise Amplifiers," IEEE GaAs IC Symposium, 1982, pp 94-97.
10. Itoh, H., Sugiura, T., Tsuji, T., Honja, K., Takayama, Y., "12 GHz-Band Low-Noise GaAs Monolithic Amplifiers," IEEE MTT Symposium, 1983, pp 54-57.
11. Hori, S., Kamei, K., Shibata, K., Tatematsu, M., Mishima, K., Okano, S., "GaAs Monolithic MIC's for Direct Broadcast Satellite Receivers," IEEE Trans. MTT-31, 1983, pp 1089-1095.
12. Ulrich, E., "Use Negative Feedback to Slash Wideband VSWR," MICROWAVES, Oct. 1978, pp 66-70.
13. Pettenpaul, E., Heidenreich, W., Huber, J., Flossmann, W., "A High-Temperature Sensor Based on Monolithic GaAs Hall IC," GaAs IC Symposium, Monterey, 1985, pp 169-172.
14. Pettenpaul, E., "Integrierte Schaltungen fuer GaAs FET Mischer" [Integrated Circuits for GaAs FET Mixers], Chap. 11.6 in Lehrbuch der Hochfrequenztechnik [Textbook for High-Frequency Technology], Vol 2, 3rd edition, Springer Verlag, 1986, O. Zinke and E. Hartnagel, eds.
15. Tsironis, C., Meierer, R., Stahlmann, R., "Dual-Gate MESFET Mixers," IEEE Trans. MTT-32, 1984, pp 248-255.

Figure 4. TV SAT (DBS) Converter

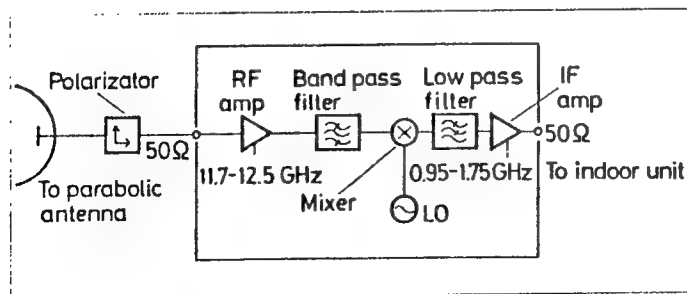


Figure 6. Low-Noise Preamplifier

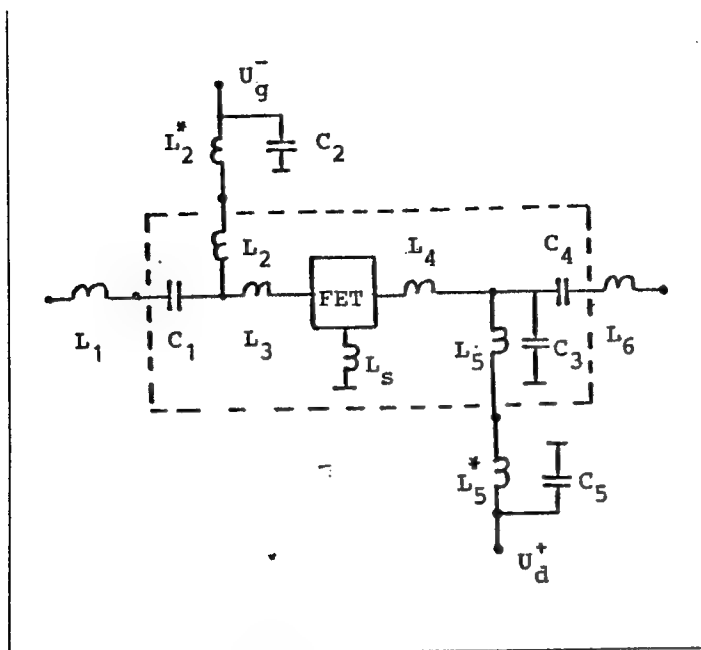
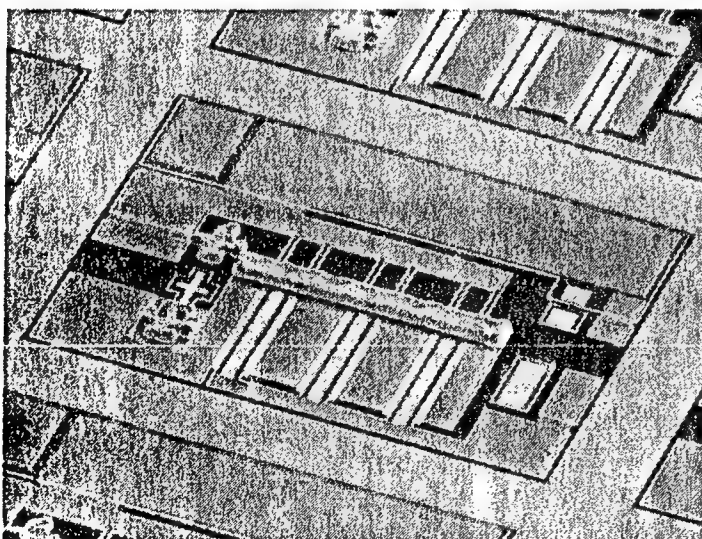


Figure 8. Chip Photograph of the Intermediate-Frequency Wideband Amplifier MMICs CGY 40 (Siemens AG) with Airbridge Interconnection



12271

CSO: 3698/373

MUNICH HDTV CONFERENCE VIEWS STANDARDS CONTROVERSY

Duesseldorf VDI-NACHRICHTEN in German No 4, 23 Jan 87 p 2

[Article by Egon Schmidt: "High Definition Television Awaits Standards"]

[Excerpts] Munich, 23 Jan (VDI-N)--"High definition TV" [HDTV] was the theme of a 2-day conference, including a special show, which the Munich Circle, a multinational association for communications research, organized in mid-January in Munich. The main question was and remains which standards should the production of HDTV images and films follow in the future as well as whether to establish uniform standards throughout the world. Furthermore, what standard should be followed when transmitting in individual countries?

At present, quite different opinions persist among the federal postal service, radio broadcast authorities, and the television industry. The latter reportedly is more hesitant than ever, and apparently some want to try once more the not so harmless game of "wait and see."

Hence, in this situation, and because of the fact that the FRG could be quite advanced technically in the HDTV business along with the Japanese, Prof Dr Wolfgang Kaiser of Stuttgart University strongly urges "a solution to the controversy over standards as soon as possible." As a member of the board of directors of the Munich Circle, Kaiser declared that it should be decided immediately whether, for example, the Japanese standard, which has already been adopted by the United States, will be accepted by Europe. This would, in fact, be a prerequisite for an international open market exchange of programs.

In this context, Kaiser together with Frank Mueller-Roemer, technical director of Bavarian Radio, explained that the television authorities, in particular, are interested in a single, uniform production standard for HDTV films, because this would both facilitate the international exchange of programs and help avoid arduous time- and quality-consuming procedures of standards conversion. However, on the other hand, efforts are also being made in Europe to develop an HDTV standard with 100 Hz instead of the Japanese and American 60 Hz half-frame sequence frequency. At least the related EUREKA project is moving in this direction. This offers a natural advantage since the proposed standard would be compatible with existing European TV norms which operate on a 50 Hz image frequency.



## PUBLIC, PRIVATE SECTORS STRUGGLE FOR CONTROL OF TELIT

### Socialists Recognize Strategic Impact

Rome LA REPUBBLICA Supplement in Italian 20 Feb 87 pp 2-3

[Article by Alessandra Carini and Giuseppe Turani: "Telecommunications, Arm Wrestling Between State and Private Enterprise"]

[Text] Rome--Today, the executive committee of the STET (Telephone Finance Corporation) is to meet for the second time within a week. STET is the holding company for telecommunications of IRI [Industrial Reconstruction Institute]. The committee is to tackle a problem that predates and postdates November 1985: the establishment of Telit. That is, a FIAT-STET holding company intended to control both Italtel and Telettra, two of our most important enterprises in the sector. The first belongs to STET, and the second to FIAT. In the thinking of its promoters, Telit is to be Italy's winning card in the world telecommunications competition. And it is also to be a kind of example: a big joint venture between the largest private group, Agnelli's, and the largest public group, IRI, in what has been regarded as one of the businesses of the future. In short, a triumph.

Until a few weeks ago, the birth of this company had been totally peaceful. Both Romiti, director general of the Turin group, and Graziosi, director general of STET, after almost 2 weeks of negotiations, had met several times during the final days and resolved any doubt and any possible conflict. In their view, all that was lacking in fact was the signatures. All the rest was black and white: the contract, the partnership agreements, the share values, and even the men to direct Telit.

### Affair Explodes

But, all of a sudden, the whole affair exploded in the hands of its makers. During the last 7 days there were meetings at all levels to get the negotiation back together, but it is not possible to say whether or not it succeeded. Romiti and Graziosi continue to say that the arguments of recent days are a tempest in a teapot. However, there are also those who are determined to give the whole story another direction.

Just to be clear, this refers to the Socialists, who first got into the act with the most authoritative and noisy minister, Gianni de Michelis, and then, apparently directly, with Craxi, who reportedly called the IRI president directly to urge him to call it all off.

The minister of labor was, as always, very clear. He used first and last names, ill-treated as never before seen in Italy the director general of a major public holding company (Graziosi of STET), and explained that it is the politicians who should deal with it, in due time.

"Under these conditions," De Michelis suddenly pronounced on Thursday 12 February, on the eve of the meeting of the STET executive committee that was to have given the green light to the operation, "the agreement cannot take place. There is the risk of a privatization-internationalization with subordination of Italy. It is a question of delicate matters that cannot be decided by Dr Graziosi. The public preeminence in the share capital is not evident in this agreement, considering that telecommunications is a strategic area, and considering the Italtel has a prominent role in regard to Telettra." In the view of Graziosi and Prodi, Christian Democrats, this was a blow on the head with a stone. But it was not the only one.

Ghino di Tacco [pen name for Bettino Craxi] unleashed his men and urged them to the attack like mastiffs. The first to give an indication was Massimo Pini, one of Craxi's most faithful, who was transferred some time ago from RAI to IRI. In the director's committee of the latter he listened to Graziosi explaining the terms of the agreement, and then drily said that the thing did not convince him and that a good written report was needed, which he would think about. Meanwhile, Socialist deputies in succession presented questions in which they referred to Telit as a "present to FIAT."

Craxi, who in the meanwhile was angry with the Agnellis and the DC because they were blocking a revision of the law on publishing industry that would get Torino out of CORRIERE DELLA SERA, jumped at the opportunity of Telit, picked up the phone, called Prodi, and told him to let the matter drop till further decision.

In the STET executive committee, which in the meanwhile met on Friday, 13 February, there was no alternative but to talk about something else and postpone everything to today's session. However, Graziosi met with Romiti and assured him that everything should straighten out within a few days. It seemed a return to the times of the sale of SME to De Benedetti, when Craxi and Amato, operating from the prime minister's office, blocked everything and sought other solutions. The Telit affair, which was to be the first big example of cooperation between public and private entities in a key sector of development, began to founder in politics.

The Socialists very drily maintained the Graziosi and Prodi were exaggerating; with the pretext of the new company, they were killing two birds with one stone: they were paying homage to FIAT, which thus entered telecommunications in force while spending very little, and in addition were in effect eliminating Marisa Bellisario, the Italtel director general, long considered the most brilliant individual in the PSI in the field of state holdings.

#### Two Problems

At the outset of this whole affair, in November of 1985, no one would have

said that it would end up this way. Certainly the two fathers of Telit did not think so, Romiti and Graziosi. The first had some problems and some cards in hand. The problems for FIAT were primarily two. It had the desire to get into something outside automobiles, just to diversify a little. It is noteworthy, for example, that the "lawyer" was accustomed to saying to those he was talking to: "Have you noticed that when an auto company is doing well it always buys something else?" The second problem was represented by Telettra, the group's telecommunications company. Or, to be precise, the company involved in transmission, a specific sector of telecommunications. Telettra, which has a turnover of 500 billion, has good earnings, exports a lot, and is not a bad company at all. Aside from it being a little small, it could certainly by itself be a card to play on the international telecommunications scene. And on the other hand, there was some desire at FIAT to get into new business, including the sector of switching, which is no small matter.

In addition to the problems, Romiti also has some aces in hand. The prestige it has earned from having restored FIAT, and the fact of not having money problems. In addition, access to the major international groups for negotiations, agreements and combinations. He explained this to Graziosi. And he also gave him to understand that if STET did not stay, a group like Agnelli's would need only a couple of minutes to find another partner.

Graziosi himself also has cards to play. In particular, he has the headache of Italtel. This is a company that was getting along very badly, then came Marisa Bellisario, when De Michaelis was in government holdings, and the enterprise moved within a few years from 200 billion in losses to 70 billion profit. Just that Marisa is not in very good agreement with Graziosi. Italtel is a kind of republic in permanent revolt. In the past, the director general of STET has tried everything to bring it to heel (for example, against all logic, he denied permission for Italtel to be quoted on the exchange, and months earlier the granting of authorization for bond loans), but nothing could be done. Moreover, Italtel, which unlike Telettra operates primarily in the switching sector, has a need to integrate, to fill out its range, and to grow, precisely because the international competition is what it is.

#### Heart of the System

For the nonexperts in the field, it should be explained that switching is to a degree the heart of any telecommunications system. What is involved is the exchanges with all the arriving and departing lines that connect to the service subscribers. Describing it this way makes it seem to be merely a shunting station. In reality, it is something much more complicated that recently, with the transition from the old electromechanical technologies to electronic, has become very sophisticated and open to many developments. In practice, any communications network, of whatever system, must start with switching, that is, from the exchange.

There are less than 10 manufacturers of public exchanges in the world (then there are the private exchanges, the small office ones with which everyone is familiar), and of these 10 there are five or six that really count. And there are the colossus variety such as AT&T, Siemens, Ericsson, and Alcatel N.V. All are in competition to find new markets. And in the past there have come

from this sector giants such as the American IT&T, the Dutch Philips, the French Thompson, and the American GTE.

As one can see, it is not an easy acclimatization: anyone who wants to survive must have products to sell, market strength, and financial resources.

Having clarified this, one begins to understand the problem that Italtel poses for Graziosi. It is among the smallest among the switching companies, and in fact has been searching for an alliance with someone for years. However, STET also has some good cards itself. One in particular: it controls the whole Italian telecommunications market. In the sense that it is the only purchaser of public exchanges.

When Graziosi meets with Romiti he is a man who knows that it is not easy to operate in this environment. His predecessors worked for months on an agreement with the real giant of the sector, the American AT&T, but in the end they did not succeed in concluding anything, because AT&T was specifically asking in exchange to have a major share of the Italian market. In short, he knows that this is a tough world. He tried to put together an "Italian pole," composed of Italtel, Telettra and Italian GTE (then controlled by the Americans, today by Siemens), which also served, in fact, as an agreement on technologies, but which was never anything more.

#### Agnelli Ties

Romiti fascinates Graziosi. It is not really a matter of an agreement with a giant in switching, because Telettra is not a giant and knows virtually nothing about switching. Yet, it is very good in transmission (thus can integrate Italtel's range of products), and, above all, the director general of STET thinks that having at his side a group that has international ties with Agnelli it should be easy to succeed where all those who preceded him have failed. Besides, it should become even more simple to sell abroad. Finally, Graziosi is operating in the whole negotiation with Romiti while warning of a subtle danger: the theme that if he does not sign the contract with FIAT, then some big foreign group could thereby enter Italy. In fact, he declared to the Chamber: in choosing FIAT as partner, "due consideration was given to the desire to avoid initiatives that could result in an international group entering our country."

At the end of 1985, the two reached agreement and there came into the world "mother" Telit, a research company that a few months later was to convert into a true holding company. The structure of this new creation was at the same time both very simple and diabolical. In practice, the new company, which was later to be called Telit, was to control 100 percent of Italtel and Telettra, which were to remain two separate enterprises, at least initially. And thus far there have not been any problems.

Where all the disagreements in the understanding emerge is instead beyond Telit, that is, among the shareholders who are to control it. In fact, it was settled that STET would have 48 percent of the shares, FIAT the same number, and that the remaining 4 percent would go to a financial institution that would be representative of the public area (as explained by the minister of

public holdings, Dairda). In fact, this 4 percent should go to Mediobanca, which at the time was regarded as a public financial institution, but in which the private sector counted more than the public sector, if that is possible.

#### Disagreement

Behind this rather baroque set-up, there was a conflict that was to poison the entire subsequent history of Telit. That is: FIAT does not want to be the minority partner in a company with a public majority. STET, on the other hand, which controls the market and is bringing the larger company to the deal, cannot give a majority to FIAT, because this would mean going out of production of exchanges, that is of manufacturing, limiting itself to management of telecommunications services. A decision that, while interesting, has not yet been taken by anyone in Italy.

This defect in Telit's birth is like a kind of virus that continues to produce monster after monster. In fact, after a company 48+48+4 (with the 4 percent in the hands of no one really knows whom, of an institution that should be public but not too public) there followed also the parasocial pacts, which perhaps have not yet even all been made known or defined. The substance is that the two groups agree that in order to conduct a discussion a majority of 60 percent is required. This is a rather usual practice in such cases, but it in fact means that either FIAT or STET has a veto right on decisions. Thus, the launching was not one of the most inspiring. Especially for those having to operate on a not easy and very competitive territory such as telecommunications.

In short, since this Telit cannot be either private or public, its statutes try to be nothing.

However, someone was quickly aware of this, Bettino Craxi, who bombarded his minister of public holdings, Cellio Darida, with very clear letters. These letters also contained traces of a certain humor. The prime minister raised doubt about Darida's capability to grasp what was happening: "There is obviously more than a misunderstanding, the concluded agreement is not clear, nor is it clear whether the interpretation you are trying to give it coincides with its provisions." He further observed: "Thus, a clarification and statement are essential, with the purpose, which I regard as indispensable, to explain in a formal and unequivocal way to IRI and thus also STET that in no case can the public control be subject for discussion in the strategic sector of telecommunications."

#### Craxi Intervenes

What Craxi was referring to is clear: he was referring directly to those agreements that give the two partners veto right. And thus he was saying to Darida: You tell me that Telit remains under public control, but how can that be true if FIAT has veto right?

At the time when the prime minister and the minister of government holdings were exchanging these letters, March 1985, it was also decided to discuss this issue and the telecommunications plan at a meeting of CIPE [Interministerial Committee for Economic Planning] scheduled for 20 March. However, who knows

why, because since then CIPE has never tackled the Telit issue or the telecommunications issue (which was furthermore a plan of great importance to Italy, which all said should be approved quickly). Yet, this did not prevent Graziosi and Romiti from continuing their negotiations over Telit. The issue of control, we do not know whether by mutual understanding, lengthy distraction by the Socialists, Darida, or whoever, did not emerge again for months and months. Rather, from time to time one heard the following like a schizophrenic performance. Darida reassures everyone: Telit will be public. FIAT retorts: not even in idea.

### Talk of Money

Meanwhile, they began to talk about money. Two auditing companies, Arthur Andersen and Price Waterhouse, were assigned the task of carrying out valuation of Telettra and Italtel. The task was complicated. FIAT pulling from one side and STET from the other. Ultimately it was decided that Italtel was worth 810 billion and Telettra 420 billion. At this point it was evident that there was a simple way to establish the Telit company. All that was needed was to agree that it would have a capital of 1.687 trillion. STET would be bringing Italtel, worth 810 billion, exactly 48 percent of the aforementioned sum, and FIAT and Mediobanca would have to pay the balance: that is, 390 billion for Turin and 67 billion for Via Filodrammatici.

In this way, Telit would be born with a capital of 1.687 trillion, and with more than 350 billion liquid cash, a useful sum for a company that was to launch itself into the complex world of telecommunications.

Instead, a very different road was followed. Telit was to start with a capital of a little over 1.2 trillion, the result of the contributions by Telettra and Italtel. FIAT was to pay 170 billion, no longer to Telit but to STET, and Mediobanca some 50 billion. In effect, Graziosi was to collect 230 billion.

It was at this point that Marisa Bellisario began to protest with all the strength at his disposal. The most gracious statement he made was: "In this way, in fact, Graziosi disinvests 230 billion from telecommunications. That is, from just where he should be investing. Isn't this why Telit is being established?" Bellisario was not wrong.

Among the Socialists, where the general director of Italtel has very many friends, the calculators were coming out and everyone was beginning to figure. And they said: if Graziosi some time ago had decided to list 49 percent of Italtel on the exchange, he would have collected at least 400 billion, but perhaps even 500 billion. That is, he would have had the money to buy FIAT from Telettra, to create his own Telit, and keep control of it. Then, if Romiti had not wanted to sell Telettra to him, he would have been able to buy something else, perhaps Italian GTE (as Bellisario himself suggested at one time) or other enterprises available for Europe, since the transmission sector is certainly not among the strategic.

But there is more. The Socialists, still with their calculators in hand, discovered that in the way Telit was emerging it would end up giving FIAT 48 percent and the veto right over Italian telecommunications industry for the

modest expenditure of 170 billion lira, less than the 3-year turnover of Italtel alone.

Finally, this blessed Telit, the Socialists reasoned, was being created among other reasons to arrive at some agreement with foreign partners. However, having such an intricate shareholder structure, made like a horse-team yoke, how would you fit in the foreigner? Would you have to reduce the public participation or FIAT's?

To say nothing about all the remaining perplexities already noted by Craxi in his letter to Darida, and recalled by Marisa Bellisario in his recent interview: such as the fact that, as formulated, the agreement does not explain who will be in charge in Telit.

However, the things that will almost certainly explode everything and bring into the trenches against Telit De Michelis, Massimo Pini, the Socialist deputies, and the prime minister in person, is the choice for general director of Telit, Salvatore Randi. Randi is a good person, about which no one has anything to say. In the past, he was a high-level manager of Telettra, then director general of Italtel (chosen personally by Marisa Bellisario), and then director general at STET, where Graziosi had brought him, by making one of his many taunts at the Italtel president. Now Randi has been sent to the head of Telit, and thus to command above Bellisario, putting the latter in a situation for leaving.

The Socialists, who never swallowed this whole story because they had the impression that Darida and Graziosi were saying one thing and would do another in prospect of seeing their beloved Marisa leaving the scene, lost all patience and decided to declare war, and seemed determined to get to the bottom of it. Unless Romiti, Graziosi and Prodi found a valid compensation at the last moment.

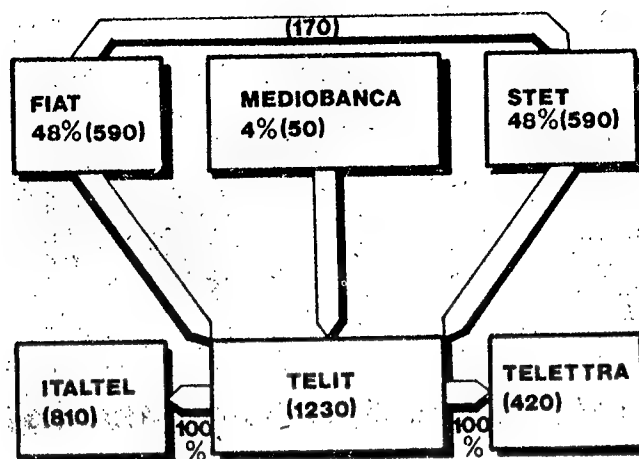
In any case, even though it is not yet known who will win this arm-wrestling, one can already identify a sure loser: the Italian telecommunications industry. The plan that was to restore the sector, and was to be approved on 20 March 1986, is still in the air. For more than a year they have been playing with the issue of Telit-public or Telit-nonpublic, while the others, abroad, have been acquiring enterprises and market shares.

In summary, while all the politicians have continued to say that the sector is strategic and rapid measures are necessary, they have continued to discuss problems that in final analysis have little to do with telecommunications. A year and a half to appraise two companies is ridiculous in a market that is moving as fast as lightning. And in view of all the controversy that has arisen over Telit, the affair is far from over.

#### Telit Plan

In the graphic, the structure of the Telit holding company according to the plan negotiated between STET and FIAT. The new company is to be controlled jointly, with a 48 percent share for each of the Turin establishment and STET. The remaining 4 percent will go to Mediobanca.

(Share portion and valuation, in billions of lira  
of participation in Telit)



Balances of the the Two Companies

Turnover	496.7 billion	1,227.9 billion
Depreciation	18.9 billion	76.4 billion
Financial charges	41.9 billion	11.6 billion
Profit before taxes	41.6 billion	49.1 billion
Business year profit	30.7 billion	42.1 billion
Net financial debits	153.6 billion	508.3 billion
Research and development	87.8 billion	133.6 billion
Billed research	17.7 percent	10.9 percent
Employees	4,008 (1)	18,840

(1) Employed in Italy.

How the Italian Market Is Shared

	FACE	FATME	GTE	ITALTEL	MARCONI	OLIVETTI	SAFNAT	TELETTRA	Others ALTRI
Public switching	14	19	13	51	—	—	—	3	—
Transmission	3	5	13	24	10	—	—	29	28
Private exchanges	5	12	6	32	—	7	13	5	20
Telephones	20	10	—	40	—	—	—	—	30

Dati 1986



# European Market in Public Switching

(1)      (2)

Paes	Parco 1986	Forniture 1987	Siemens	Ericsson	Alcatel N V	Plassey e GEC	Italtel	ATT/ Philips
AUSTRIA	2850	190	50	—	50	—	—	—
BELGIO	3100	200	40	—	160	—	—	—
DANIMARCA	2600	180	70	90	20	—	—	—
FINLANDIA	2300	180	50	50	—	—	—	—
FRANCIA	24100	1620	—	—	1360	—	—	—
GRECIA	3350	270	110	—	—	—	—	50
IRLANDA	950	100	—	50	50	—	—	—
ITALIA	18450	1050	120	200	150	—	580	—
NORVEGIA	1800	140	—	60	80	—	—	—
Netherlands PAESI BASSI	5900	360	—	70	50	—	—	240
PORTOGALLO	1650	120	60	—	60	—	—	—
U.K. REGNO UNITO	21600	1870	—	190	—	1500	—	—
R.F.GERMANIA	26900	1450	1090	—	360	—	—	—
SPAGNA	10000	710	100	110	500	—	—	—
Sweden SVEZIA	5250	260	—	230	—	—	—	—
Switzerland SVIZZERA	3300	150	50	50	50	—	—	—
TOTALE	134100	8850	1740	1100	2890	1500	580	290
Quota di mercato		100%	20%	12%	33%	17%	7%	3%

market share

(1) Existing (thousands of lines)

(2) Additional connections (thousands of lines)

## Antiquated Legislation

Rome LA REPUBBLICA in Italian 20 Feb 87 Supplement p 5

[Excerpt] And Italy? The Italian legislation is among the most archaic, and the institutional set-up of telecommunications one of the most intricate and irrational. The present consolidation act that regulates the sector, with a thicket of rules, came out in 1973 but is virtually the same as the old postal code for telecommunications of 1936. The rules, which establish the system of state monopoly and the possibility of concession services, do not refer to regulation of all the sectors that have developed in the meantime, from satellites to the new services. If they were applied to the letter, many enterprises would have to shut down their networks because they are outside the law. The service is managed directly by both the Posts, with the State Telephone Services Agency; and SIP, Italcable and Telespazio as concessionaries. For years there has been talk of a reform that would review this archaic set-up, bring everything into the hands of a single manager, introduce effective control, and review the rules for new services, making them less arbitrary and more rational. However, the Gava reform, already old when born, has been stalled for years. Other proposals have been advanced but have remained dead letter.

9999

100: 5500/2463

CONTRACT AWARD SEEN UPGRADING SINTRA SPACE TELECOMMUNICATIONS CENTER

Lisbon O JORNAL in Portuguese 3 Apr 87 p 7-NT

[Text] The Radio Marconi Portuguese Comapny will cease to be a mere national user of the satellite communications systems.

The recent award to the company of the ground stations that will guide and oversee the performance of Eutelsat II will enable the company to enter the business and make a qualitative leap in advanced communications technologies. By 1989, four new antennas, representing an investment of half a million contos, during a preliminary phase, will appear at the Sintra Space Telecommunications Center, near Pero Pinheiro.

The news excited the "surrounding area," and brought enthusiasm to all those concerned about the development of new technologies in Portugal. The decision was made in Paris, during the course of a meeting of Eutelsat (a European consortium for satellite telecommunications), of which Marconi (CPRM) is a part, at the government's designation.

The company will install four new antennas at Sintra, which will make it possible to measure at a distance the satellite's parameters, namely, the relative position from earth, and the status of the amplifiers, fuel, and power. Moreover, it will be possible to make changes in orbital position, correction of the orbit, and ejection outside of the orbit when the satellite completes its "active" life cycle.

A service of this type is highly competitive among the international companies. Marconi defeated the European competition, represented by five respected firms: PTT (France), BTI (United Kingdom), Telespazio (Italy), Televerdket (Sweden), and the European Space Agency.

As of 1 January 1988, for a 10-year period, CPRM awarded the service to be provided to Eutelsat. Meanwhile, it will invest half a million contos in the installation, during a preliminary phase, of four new stations at its Sintra Space Telecommunications Center.

The rendering of the new service will bring the country a million contos in foreign exchange, at 1986 prices. The company has observed its capacity for

technical intervention in the field of providing telecommunication services recognized internationally, and is now preparing, with greater confidence, to "mark" its place on the unstoppable "train" of future technologies in the sector.

#### Eutelsat-I 'Passes' Through Pero Pinheiro

Eutelsat, with its headquarters in Paris, is an intergovernmental organization with legal status, the purpose of which is to construct, maintain, and manage the space segment of all the satellites in the system, as well as the tracking, telemetering, command and control, and monitoring stations, for the operational support of those satellites.

The system was devised to serve the European countries, including Madeira, the Azores, and the Canaries, so as to make it possible to establish telephone and television circuits between any countries or territories in the region covered.

In addition to the traditional telecommunications and television transmission services, the Eutelsat makes it possible to engage in special services, such as videoconference, data transmission, and multiservices.

The Sintra IV Ground Station antenna cost nearly a million contos, affording direct connections with the organization's European countries, with the advantage of avoiding transit through other countries.

Within the Eurovision area, that station allows for continuous reception of two high-quality TV programs, which are directed toward RTP [Portuguese Radio-Television System], and which it can include in its programming. The transmission uses (analogic) frequency modulation, but plans call for the future introduction of digital techniques.

The telephone channels, in turn, are handled digitally in their entirety, with the distribution of time made in small intervals assigned to the various stations depending on the respective traffic loads.

#### From Brazil to Asia Via Marconi

The Sintra Space Telecommunications Center, where the four new antennas now awarded to Marconi will be installed, has three other stations and the respective antennas: Sintra I (1974), of the Intelsat type, for satellites in the Atlantic zone; Sintra II, which operates with a leased space segment in Intelsat satellites and which is part of the domestic network in the continent-Madeira-Azores (CAM) triangle; and Sintra III, also of the Intelsat network, used for communications through satellites of the Indian region.

This station resulted from a joint venture undertaking with EMBRATEL [Brazilian Telecommunications Company] and directs the traffic from Portugal to Asia, the traffic from Brazil which arrives via submarine cable, and that from other South American countries.

Marconi belongs to the Maritime Mobile Service's Inmarsat network for ocean communications. Through an agreement with Brazil, the "relay" station is situated in Tangua, on the South American coast. The communications are transmitted and received by submarine cable, entering the satellite network via the Brazilian station. Nevertheless, this service has little implementation because only eight Portuguese ships are equipped for the system.

2909

CSO: 5500/2490

END